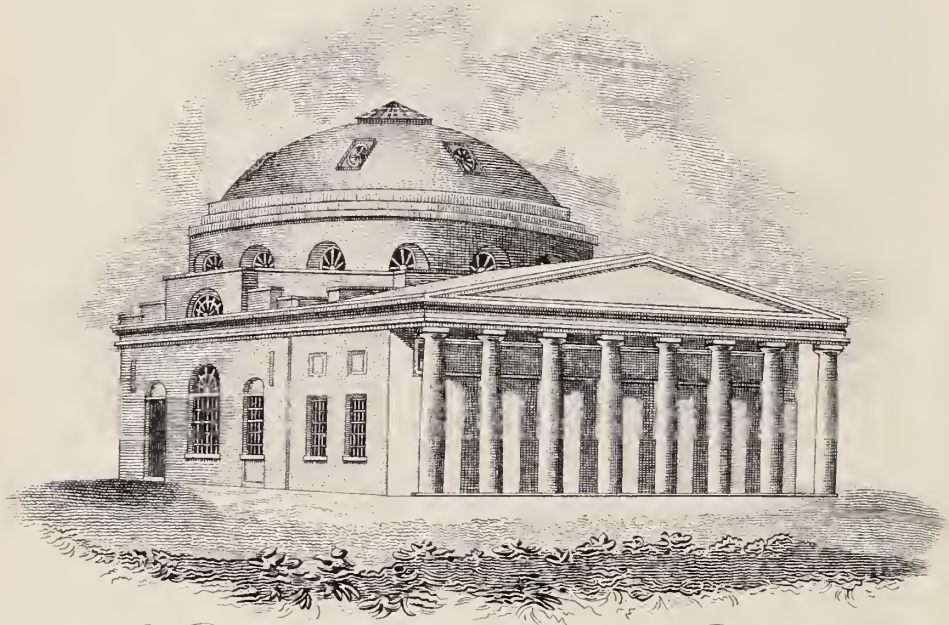




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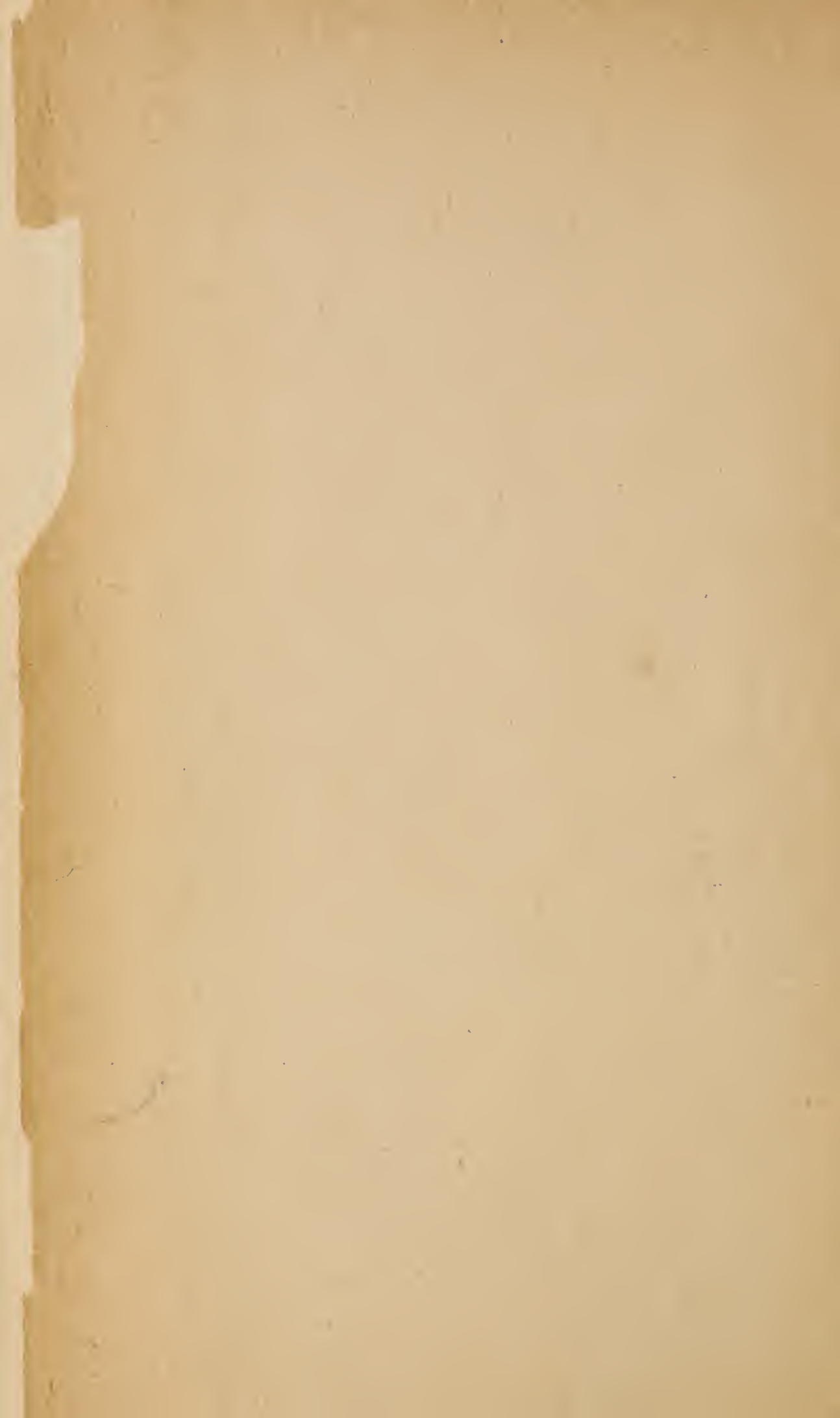


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A STUDENT'S NOTES

—OF—

A COURSE OF LECTURES

—ON—

THE PRACTICE OF MEDICINE,

DELIVERED BY

SAMUEL C. CHEW, M. D.,

Professor of Principles and Practice of Medicine  
and of Clinical Medicine

—IN THE—

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# ERRATA.

The following corrections should be made in the text before the book is used. The errors are typographical and of little importance, but it would be more satisfactory to the student to correct them—it can be done in a few minutes.

Page 7, line 5 from top, "Idrophatic" should read Idiopathic.

✓ 8, line 18 from bottom, "vass-motor" should read vaso-motor.

✓ 9, line 9 " " "Phorynx" " " pharynx.

✓ 10, line 9 " top, "Tonsolitis," " " tonsillitis.

✓ 10, line 11 " bottom, "dyptheria" " " diphtheria,

✓ 13, line 3 " " "Argtenoid" " " arytoid.

✓ 21, line 17 " top "postpant" " " post-part.

✓ 24, line 15 " bottom, "suppression-mensium" should read suppressio-  
mensium.

✓ 25, line 18 " top, "Anaurismis" should read aneurism.

✓ 25, line 12 " bottom, "Hyperdermic" " " hypodermic.

✓ 25, line 5 " " "hypodemically" " " hypodermically.

✓ 25, line 5 " " "3" " " 3 or 4.

✓ 25, line 4 " " "Ergoting" " " ergotin.

✓ 26, line 13 " top, "mediastinum" " " mediastinum.

✓ 24, line 6 " " a semi-colon should be placed after the word *is*.

✓ 29, line 6 " bottom, "five-tenths" should read five or ten.

✓ 30, line 8 " top, "HCL" " " H Cl.

✓ 30, line 12 " bottom, "Mist. Ferri gt." " " Mist. Ferri et.

✓ 34, line 9 " " "Himroid's" " " Himrod's.

✓ 34, line 5 " " "oz." " " O (or pint.)

✓ 35, line 9 " top, "alkilies" " " alkalies.

✓ 35, line 7 " bottom, "squamoses" " " squamous.

✓ 36, line 19 " " "occurrence" " " occurrence.

✓ 38, line 8 " top, "Septsaemia" " " septicaemia.

✓ 38, line 17 " " "fifteenth" " " fifteen.

✓ 38, line 6 " bottom, "Symptomology" " " Symptomatology.

✓ 42, line 2 " top, "HNO<sub>2</sub>" " " HNO<sub>3</sub>.

✓ 43, line 9 " " "venal" " " renal.

✓ 51, line 3 " bottom, "serious" " " serous

✓ 52, line 5 " top, "lanceolating" " " lancinating.

✓ 53, line 18 " " " " " " "

✓ 53, line 1 " bottom, " " " " "

✓ 57, line 7 " top, "change" " " cause.

✓ 59, line 15 " bottom, "atrophia" " " atropia.

✓ 62, line 4 " top, "Symptomology" " " Symptomatology.

✓ 71, line 12 " bottom, "neuroticic" " " neurotic.

✓ 73, line 6 " top, "lanceolating" " " lancinating.

✓ " line 10 " " "plexis" " " plexus.

✓ 74, line 18 " bottom, "my" " " may.

✓ 76, line 5 " top, "exophthalmic" " " exophthalmic.

✓ " line 18 " bottom " " " "

✓ " line 12 " " "symptomology" " " symptomatology.

✓ 77, line 17 " top, "exosthalmos" " " exophthalmos.

✓ " line 18 " bottom "myocarditis" " " myocardial.

ge 78, line 15 from top,	"Dypttheria"	should read	Diphtheria.
83, line 17	"nibble"	" "	nipple.
84, line 14	"is"	should follow	murmur.
86, line 3	"desertspoonful"	should read	dessertspoonful.
" line 6	"digitalis"	should read	digitalin.
89, line 9	"endocarditus"	" "	endocarditis.
93, line 8	"senillus"	" "	senilus.
95, line 6	"lancolating"	" "	lancinating.
98, line 8	"insoluble"	" "	soluble.
101, line 16	"circhosis"	" "	cirrhosis.
103, line 5	"lanceolating"	" "	lancinating.
106, line 10	"detenated"	" "	deteriorated.
111, line 3	bottom "dypttheritic"	" "	diphtheritic.
112, line 8	top "Dypttheritic"	" "	Diphtheritic.
116, line 17	bottom "odorm"	" "	odor.
126, line 4	"distinction"	" "	distension.
129, line 2	"phletictis"	" "	phlebitis.
133, line 17	top "semi-flexed"	" "	semi-fluid.
136, line 16	bottom " $\frac{3}{4}$ "	" "	3 or 4 pounds.
139, line 12	"nerve"	" "	mucous.
141, line 13	"Henbe"	" "	Henle.
" 145, line 16	top "pale"	" "	pole.
" 147, line 11	bottom "eczena"	" "	eczema.
" 150, line 13	"arthiritus"	" "	arthritis.
" 152, line 13	top "	" "	"
" 152, line 16	" "	" "	"
" 162, line 16	"that"	" "	the.
" 166, line 6	bottom "glanular"	" "	granular.
" 172, line 5	top "normally"	" "	normal.
" 178, line 6	"Anserima"	" "	Anserina.
" 194, line 2	"estrymoses"	" "	ecchymosis.
" 195, line 18	"last word, is"	" "	are.
" 206, line 4	"accont"	" "	account.
" 211, line 17	"is lost"	" "	lasts.
" 212, line 17	"intermittent"	" "	remittent.





# PRACTICE OF MEDICINE.

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Practice of Medicine is a subject that occupies the treatment of diseases. Disease is a diviation of any function or structure of the body from the normal. Diseases are Organic and Functional.

**Organic Disease** is one in which the organ affected undergoes such changes that the structure of it is changed structurally—e. g., pneumonia, endocarditis.

**Functional Disease.** As far as we can ascertain there is no change in the physical integrity, yet it behaves very widely from normal, as, palpitation of the heart, some forms of dyspepsia which are called sympathetic for want of a better name; but <sup>it</sup> is possible for organs like the heart to ache without some organic changes. It may be, and is very probable, that in many of these cases there are changes which we are unable to detect. There is a class of diseases which we can't classify as either organic or functional wholly; such diseases are the *idiopathic fevers*, such as typhoid, etc.; but we roughly divide the diseases into the two classes—yet, remember there is no line of division.

Again, we have LOCAL and GENERAL Disease, but we must again use these terms guardedly, as we can't call pneumonia local, although it has local lesion.

**Acute and Chronic Disease.** By Acute is not meant a disease in which the symptoms intensify, but a disease of short duration, while Chronic disease is one which has lasted for a long time, and there may or may not be an acute symptom, but acute has rather to do with duration.

**Primary and Secondary Disease** is very important as to treatment, because unless the primary disease is arrested, the secondary disease can't be cured—e. g. heart and kidney diseases; either may be secondary to the other, or be the



cause of the other. If the cardiac disease is early recognized, there may be something done to prevent affection of kidney. Again, the kidney may be primarily affected, hence there is a poison left in the system which so affects the blood vessels as to cause backward pressure, and consequently heart trouble.

**Contagious and Non-Contagious.** It is a question of word applied to certain diseases which are said to be infectious and contagious.

CONTAGION means not in actual contact of two persons, but in contact with something that comes from the one affected. Some diseases are propagated by atmosphere, but the two words may be said to be synonymous, and mean that a person may be brought in contact with the pathogenic cause, and, better to say, *communicable* and *non-communicable*, *congenital* and *acquired*. The former are those transmitted from parent to offspring, when brought into the world; acquired are those which occur any time during life. But many diseases come under both heads.

(1) **Sporadic**, (2) **Epidemic**, (3) **Endemic**. The first means scattered—e. g. dyspepsia. The third means when it begins in a certain region, and is not carried from one locality to another—e. g. malarial fever. The second is when it comes from one district to another—e. g. typhoid, cholera, etc.

*For method of classification* we have diseases of nervous system, circulatory system, etc., yet it is impossible for one of these diseases to be present without invading another part of the body.

**Etiology.** Causation is important in the first place, to show us how to prevent, or to cure by removing the cause. Many diseases we are unable to find the cause of, but on grounds of analogy we infer the cause to be similar to that of other diseases of a similar character—e. g., know cause of typhoid, but not of smallpox. The trouble may lie in the inability to see with microscope.

SYPHILIS is another of those diseases. Cause is of great







importance as to prognosis—causes are *predisposing and exciting*. Habits of life, existence of other disease, are predisposing causes. Alcohol is a predisposing cause for a great many organic diseases—e. g. alcoholic pneumonia—that is, when alcoholic subjects have pneumonia that is very likely to kill, although the patient would recover were it not for the habit.

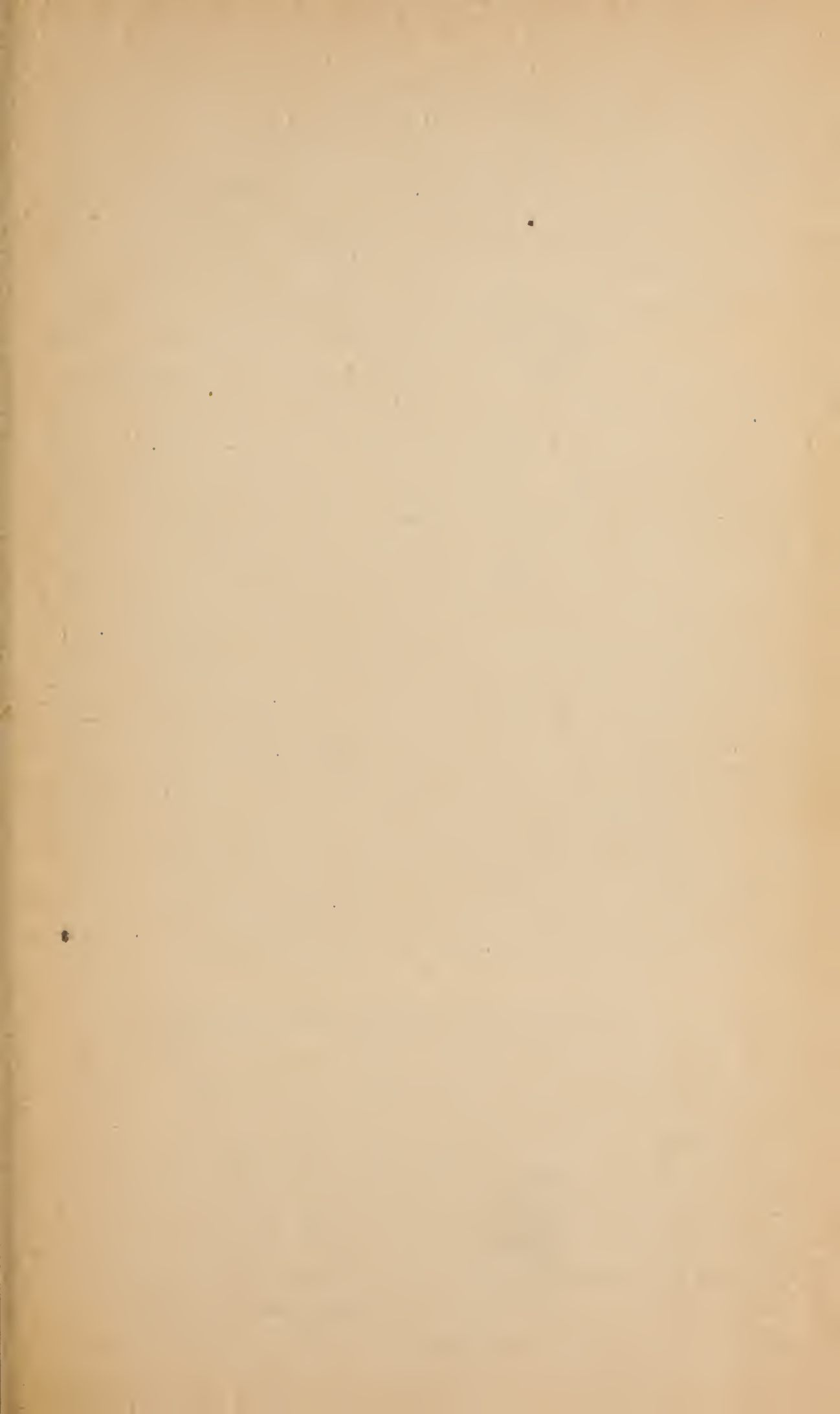
ETIOLOGY is of special importance in respect to treatment, not only to the removal of cause, but that according to cause will treatment be appropriately based—e. g., ophthalmia, whether due to Syphilis or not. Predisposing and exciting causes differ, yet we not only ought to know the exciting, but we ought to know the predisposing cause, if such exists. What is apparently the exciting cause will in different individuals produce different effect, according to existence in different individuals of least resistance. In case of some maladies their occurrence once predisposes a second attack; on the other hand, the occurrence of some diseases will render the person less liable for the disease to be received again, for that which afforded the pabulum for first invasion is exhausted—e. g., smallpox, typhoid fever, measles, and other exanthems. This is *immunity*.

**Symptomatology:**—There has come in medicine a difference between symptoms and signs, but logically this is not right. Their study is of pathological conditions that appeal to the senses, as derived from observations made by sight, hearing, and feeling. In regard to those by *sight*, the medical physiognomy must be cultivated, and is of great importance—e. g., the aspects which are seen on the countenance in phthisis, viz: palor, with hectic flush, emaciation of neck and chest. Again, another class of cases is the different forms of Bright's disease, especially that form where inflammation is in uriferous tubules; there is palid, doughy look of face, puffy lower lids, and loss of elasticity of skin, and if you see patient's feet your ideas are confirmed. Again, in anaemia the whiteness of face, accompanied by the glistening conjunctiva of phthisis, of the puffy lower eyelids of Bright's.

Again, in patient who labors under dilatation of heart, the anxiousness of facial expression and palor with leaning forward in bed, etc., while in hypertrophy the face is flushed and vessels are full, with swollen and turgid features.

**Touch** gives a great deal, viz: change in *size* or *consistency* is found by palpation, and this in some instances may tell the story—e. g. cancer of liver, or hypertrophy of liver.

**Hearing.** Whole science of percussion and auscultation depend on hearing. (Diagnosis is logical deduction from data.) In case of diagnosis from those organs, viz: heart and lungs, there is nothing in mathematics more certain than some points obtained by auscultation and percussion in different diseases. *Symptomatology* leads to diagnosis and the latter to treatment. DIAGNOSIS means to know one thing from another. Study of symptom will also lead us to an accurate PROGNOSIS, which must be studied well, in order that you should not suffer from discredit. *Prognosis depends obviously (1) upon the nature of the malady*, as in some diseases the prognosis is perfectly clear—e. g. hydrophobia means death. Again, in cancer, although temporary relief may be had, yet it sooner or later will cause death in all probability. Again, in Phthisis be guarded in using too favorable prognosis. Yet we may withhold our own opinion, but we should not express ourselves in the presence of patients, especially in heart disease, as the person would be gloomy and the remainder of life miserable, but in all cases you should communicate your opinion to some prudent and reliable member of the family, so that should they want consultation you should submit always. (2) *Inherited tendency* adds greatly to gravity of prognosis—e. g. persons who are children of phthisical patients. Bronchial Catarrh is much more serious in them than in those not liable. (3) Again, *recurrence* of some diseases renders the prognosis very grave—e. g. delirium tremens, the prognosis more grave at each subsequent attack. (4) Again, *use of proper remedies* in many cases will render prognosis more favorable. (5) In certain affections there are certain specific signs which will well enable you to







5  
give the prognosis—e. g. in pneumonia, a certain fall of temperature is a harbinger of good. Early high temperature in typhoid fever is an outlook of gravity; if for the first week the temperature does not go higher than 103 you have a mild case, but if in two to three days temperature goes to 104 or 105, you will have a bad case. In phthisis patient who increases in weight and has low fever the prognosis is more favorable than Auscultatory changes.

**Therapy** has a two-fold character, partly EMPIRICAL and partly RATIONAL. The former is very useful but has the story of discovery concealed as founded on tradition or experiment. The latter is based upon preconceived experiments or facts. Many remedies which were empirical have become rational—e. g. quinine. Some remedies do good under some circumstances, while under others they do harm—e. g. digitalis in heart disease. Remember that therapeutic principles are not invariably like mathematical principles—e. g., opium as a rule relieves pain, yet at times will increase pain and discomfort by giving it. This is due to *idiosyncrasy*, and when this is found in one of your patients mind it. Again, the inherent tendency of disease must be remembered—e. g. the doctor thinks his remedy has cured while it really did harm, and retarded the case—e. g. the use of mercury in pneumonia. So avoid drugs that do no good. The expectant system of medicine should be used very often.

**The Therapeutic Measures are** (1) PROPHYLAXIS, or preventive medicine, should be used, and the most striking instance is vaccination, also, use of quinine in some instances.

(2) ABORTIVE. Having power of checking disease and stopping disease at the very outset; does not often happen that a person can do this, because it must be done in a comparative short time after reception of disease—e. g. in incipient stages of pneumonia. Dr. Chew has seen doses of quinia and  $\frac{1}{4}$  grain morphia abort the case.

(3) CURATIVE. Leads the disease on to result into per-



fect recovery. We may presume that poison in the blood is destroyed by Hg. and Ki. in syphilis.

(4) PALLIATIVE. When we can't hope to put an end to a disease, yet we can lessen the severity of the symptoms so as to render life more pleasant or more bearable to patient—e. g. cancer, etc.

(5) SANITARY MEASURES. Hygienic measures. Wholesome air, regulation of exercise, and proper water supply, diet, etc.

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## PATHOLOGY.

Pathology means the study of diseased conditions, but the pathological conditions of fevers can't be defined in short, yet we must make some reference 'ere you consider special or general diseases. FEVER is described as a process in which the Circulatory, Nervous, Nutritive, Digestive and Secretory, and Excretory systems are disturbed in various degrees—e. g. in *circulatory* increased arterial tension, increased action of the heart, although they are aggregated in fever together, yet can't be considered as altogether indicative of fever—e. g. in running the heart acts more quickly, hence more increase of heart's action alone does not necessarily indicate fever; although it occurs in fever, yet it occurs without fever. Again, neither does increased arterial tension of itself indicate fever, as in Angina Pectoris you have no fever.

NERVOUS system has control of the heat-producing function of body. Some regard it as an inhibitory action, and when this centre loses its control the temperature rises. Heat is lost from the body in various normal ways. 1st, warming of expired air. 2nd, evaporation of water, whether by breath or in the perspiration. Now, if they are checked, as they sometimes are by the nervous system, then fever is produced. Hence we can see how the nervous system is involved, in so far as rise of temperature is concerned.

SECRETORY and EXCRETORY, as diminished urine, and



Definition

Etymology

World Anatomy

Symptoms

Differential Diagnosis

Prognosis

Treatment

bile and lessening of intestinal secretion, hence constipation.

NUTRITIVE changes, viz: Wasting and emaciation of patient, which depends a great deal upon the height of fever. The combined action of all these are signs of fever.

IDIOPATHIC FEVER is one in which febrile process is the essence of the disease or disorder. Malaria, typhoid, etc.

SYMPTOMATIC FEVER, when it occurs secondarily to disease elsewhere—e. g. pneumonia, pleurisy, etc. It may be that our knowledge on this will have to be changed, but now we will have to classify fevers as above.

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## SPECIAL DISEASES.

(NOTE.—Diseases may practically be divided into General and Special Diseases. Special Diseases involve diseases of the respiratory organs and circulatory apparatus.)

### Diseases of the Respiratory System.

**Coryza:**—Affected surface is usually limited to m. m. of nose, but may invade conjunctiva, Eustachian tube, frontal sinuses, or any of the accessory cavities of the nose.

DEFINITION—An inflammation, with hyperaemia, engorgement and increased mucous flow of nasal m. m., especially over Turbinated bones, accompanied by a degree of surface-chilling and a mild increase in temperature (100.)

CAUSES:—*Sudden chilling* of surface most frequent, which causes increased flow of blood to internal organs. Irritating gases as ammonia, inhalations of *emissions from certain plants, dust*, etc. Some *medical agents*, especially K. I. which also sometimes produces cutaneous eruption, also copaiva, the drug being excreted by the air passages. Coryza is an essential point in measles, less frequent in scarlatina and smallpox.

MORBID ANATOMY. *1st stage:* Redness, dryness, puffiness, and Hyperaemia, calibre of nose lessened. *2nd stage:* Flow of thin, transparent, glairy mucous, alkaline and irritating. *3rd stage:* Flow becomes thicker, opaque and greenish and finally stops. If condition progresses and there be syphilitic or strumous diathesis caries of bone follows, but caries



probably never occurs unless there is some constitutional flaw. Eustachian tubes may become stopped up (mild catarrh) and deafness follows, soon over.

**CONSTITUTIONAL SYMPTOMS**—Slight fever, change in voice due to stoppage of nose, called "nasal voice," but is just the opposite. There is headache, chilliness, etc., when it extends to frontal sinuses, dull heavy pain in the middle of the forehead, extension to conjunctiva common, flow of tears, etc.

**DURATION**—Usually short, ordinarily 2 or 3 days.

**PROGNOSIS** good; will generally of itself subside. Nursing children feed by bottle, if necessary, as child can't sometimes suck because nose is stopped up. Under unfavorable circumstances becomes chronic, then very stubborn.

**TREATMENT**—Prompt dose of quinia and morphia— $\frac{1}{4}$  gr. may stop; hot mustard foot-bath and full dose (10 grs.) of Dover's powder at bed-time may cut short at once, as the Dover's powder allays cough and produces diaphoresis. 10 to 15 grs. of quinine on going to bed will often disperse the disease; it acts upon the vaso-motor system and contracts the capillaries. If breathing is difficult inhale steam, containing a little deodorized laudanum to relieve discharge, or tincture of iodine and cologne of each equal parts in bottle inhaled frequently; or spirits of camphor, or a lump tied in kerchief, or spray with 2 per cent. cocaine solution. This has mild astringent action as well as anaesthetic effect. If discharge continues too long, Dr. Williams' dry method might be employed: cutting off all fluids for two or three days, or *Flenier's snuff* consisting of bismuth 2 drms., gum acacia 2 drms., and morphine 2 grs., which is snuffed; good as cakes up nostrils.

**Chronic Coryza.** **DEFINITION**—Chronic catarrhal inflam. of nasal m. m., with continual flow of mucous, but no loss of tissue.

**CAUSE**—Same as those for above in persons of less resisting power. Hyperaemia has usually disappeared but there is a hyperplasia.







DIAGNOSIS between this and Ozaena made by being no loss of tissue in this.

TREATMENT—Wash out nasal cavities with compressed air apparatus (with salt 1 oz. to water 1 pint), and then apply by spray Dobell's solution, of which the following is the formula :

Bicarbonate of soda, gr. lx.

Borax, gr. lx.

Carbolic acid, gr. viii.

Glycerine, oz. i.

Aqua, ad oz. viii.

M. ft. solution.

If not use zinc sulphate gr. ii to oz. i water, and if this is not sufficient use zinc chloride  $\frac{1}{2}$  gr. to oz. i every 4 hrs. If above condition continues for a long time accomp. by strumous or syphilitic constitution it produces Ozaena.

## OZÆNA.

DEFINITION: Chronic catarrhal ulceration involving bones of the nasal cavity, (caries) attended by great fetor of breath.

MORBID ANATOMY: Thick crusts form on m. m. extending into the bones and a muco-purulent matter accumulates under these crusts and gives rise to fetor. May extend into the Frontal, Ethmoidal, Sphenoidal or Maxillary sinuses.

SYMPTOMS: Cough due to patient's efforts to rid nose of discharge. Extreme fetor of breath, which patient himself may be unable to smell because nerves may be destroyed: retching and vomiting may be caused by the falling of crusts into Pharynx. Seldom acute pain; dull headache if sinuses are implicated.

PROGNOSIS: As regards life favorable. If Syphilitic more easily treated than scrofulous which may persist for years.

TREATMENT: Clear out cavity with compressed air apparatus and then make use of Rhinoscope to see if any dead bone is loose, and if so remove same. Then make use of above astringent, spray 3 or 4 times a day. Patient can apply himself. Dobell's solution should be used constantly

twice or thrice a day. 1 part carbolic acid mixed with 3 parts iodine may be directly applied by brush. If mass of necrosing tissue or an ulcer is present a crystal of chromic acid or nitric acid, or nitrate of silver grs. x. to oz. i. aqua, with brush, or lunar caustic may be applied. Of course constitution should be attended to. Some cases defy treatment, which are necessarily prolonged and some patients have not the patience.

## TONSILITIS AND PHARYNGITIS--QUINSY.

At times they may occur separately but most commonly are associated.

**DEFINITION:** An inflammation of the mucous membrane covering tonsil, and frequently affecting the structure of the gland; more common in young people; most common from puberty to 28 or 30. When confined to m. m. is of little consequence. When structure of gland is once invaded produces predisposition to other attacks. Effects may be serious.

Three kinds: Simple, Follicular, and Suppurative.

**CAUSES:** Exposure to cold, hot liquids, irritating gases, etc. Hereditary Syphilis and strumous affections are predisposing causes.

**MORBID ANATOMY:** Tonsils swollen (sometimes both, more often one,) m. m. red and tonsil sometimes covered with a creamy substance which has been mistaken for dyptheretic exudate; it is easily wiped off. Uvula is red and elongated. 1st stage, m. m. is dry and then great pain on swallowing. When suppuration is going to take place the gland is prominent, soft and fluctuating.

**SYMPTOMS:** Dryness of throat and pain on swallowing, out of proportion to inflammation, due to close connection of m. m. to underlying muscles, uvula is elongated causing incessant cough. In those cases which tend to suppurate the engorgement and swelling will come on suddenly. Temperature 104 to 105. Chill when suppuration comes on. Most







often no suppuration when the pharyngeal m. m. chiefly is affected, but when tonsil is the principal seat suppuration is apt to occur.

DIAGNOSIS: Redness of mucous membrane and enlargement of glands. Flush may be felt.

PROGNOSIS is usually good, but abscess may burst while patient is asleep and produce suffocation.

TREATMENT: Bursting of abscess can be obviated by opening with Bistoury, wrapped to near point entered at base and cut towards middle line. If seen early before suppuration and fever is high give quinine gr. x. and morphina gr. one-sixth or  $\frac{1}{4}$ , and it will usually prevent suppuration; or purge patient with Epsom or Rochelle salts and Tarter Emetic, one-twelfth gr. every hour until nausea produced will prevent suppuration, or 1 drop of tinct. Aconite radix every half-hour until pulse is reduced, and see your patient at least once in three hours. 2 to 3 doses may have required effect. Spray throat well with Dobell's solution, and inhale warm vapor. Good may be done by applying a sol. of Bicarb. of Soda. Sometimes tonsilitis results in hyperplasia when chronic, especially in child from 8 to 12. The organ should then be removed by Fahnstock snou. If left, nourishment of child seems to be impaired, and it becomes pale, thin and weak, the snou should not be pressed too close to pharyngeal wall as partial removal will be sufficient. Signs that suppuration may occur is first history of previous attack, special signs are very high temperature, 103 to 105, rapid increase of swelling and great redness of parts; Repeat salts every three hours until purgation takes place and followed by tartar emetic; but should suppuration occur you should evacuate by puncturing with sharp pointed bistoury, letting patient lean forward, and we get immediate relief. Sometimes when symp. is only sub-acute the gland continues to enlarge: occurs especially in children of strumous diathesis; if only moderate in amount needs nothing, but should it interfere with the respiratory functions then should be removed, which can best be done by tonsilotuine. 'Tis

not too well to press too close to pharyngeal wall as may have severe hemorrhage, but remove  $\frac{1}{2}$  Hypertrophied mass and the stump atrophies. Some advocate tinct. Iodine injected, silver nitrate application, etc.

## LARYNGITIS.

Catarrhal inflammation of the laryngeal m. m., which is continuous with the above mucous membrane, and the sub-mucous tissue may become affected. May be acute or chronic—the latter more common. There may be tubercular Laryngitis associated with Phthisis—again may have Syphilitic—again may have neoplasms in larynx. Most important and requiring treatment at once is Acute Catarrhal Laryngitis, which is inflammation of the m. m., and at times of the sub-mucous tissue accompanied with discharge of mucous; so long as secretion can reach the surface not much danger, but if inflammation extends to sub-mucous membrane and have exudation in sub-mucous tissue it is extremely dangerous, as it may cause closure of chink of glottis and death. Many cases are not involved with this closure. It is simply the location of the inflammation that constitutes danger. Some redness and swelling may reach Pharyngeal m. m. as the two nearly always are associated. Laryngoscope should be used. May be sudden attacks of dyspnoea due to inability of the muscles; this cures itself; but if there is exudation under mucous tissue, then it does not cure itself. So remember that there may be a slight rise in temperature slight feeling of soreness may be had in mild cases, and in fact in children from badly ventilated rooms, prolonged constipation or heavy meals; sometimes there is laryngismus stridulous, in which child gets blue in the face and death seems imminent, but when blood becomes charged with carbon dioxide gas child breathes and gets well. Dryness of parts at first, later moist; may have small hemorrhage when sub-mucous tissue is affected. There is tumefaction of vocal cords and partial transparency.









CAUSE: Dampness, or exposure to dampness or cold together. Inflammatory vapors—e. g. aqua ammonia. Accompanies exanthemata as scarlet fever, measles, smallpox, ~~and~~ typhus, and typhoid.

SYMPTOMS: Patient is slightly hoarse, little soreness, sense of tickling, or may be pain. You examine and may be red, may be slight fever, but if it goes down to sub-mucous tissue, fever much higher, and if cartilage be pressed patient whines from pain; use laryngoscope and tell him to say "AH," and if the cords are pinkish and oedematous and do not approximate then it is dangerous.

DIAGNOSIS: From true croup, it is difficult to use laryngoscope, but symptoms are so marked that you can't mistake it on account of membrane extending to pharynx; generally depends upon promptitude of interference in dangerous cases.

TREATMENT is mild, good to keep in uniform temperature and avoid exposure to dampness. Then inhaling warm vapor acts as poultice and relieves dryness and irritation as chink fills with catarrhal secretion so that 'tis easily gotten rid of. Good to add equal parts Deod. Tinct. opium and Comp. Tinc. Benzoin 1 dr. each to a pint of water. Ice may do good. If any fever give a little quinine, and if needed at night give anodyne. But if on examination find that parts are oedematous, etc., with corded pulse and high temperature, application of four to five leeches to parts is good if seen early, but not if late. Then hot vapors should be inhaled, but in spite of this if oedema is coming on as noted by patient's breathing and cyanosis then there are two measures: one scarification of larynx, but at times exudation matter is fibrous in nature, then Tracheotomy should be done when danger is bridged over. Important thing for doctor is to make diagnosis from Laryngismus Stridulus, or Spasm of Glottis, which is neurosis and spasm chiefly of arytenoid muscle. So long as it is pure neurosis it often works its own cure, as blood becomes sufficiently carbonated. Occurs more commonly in childhood (called Spasmodic

croup), and sometimes without any disease of throat, but cause is often reflex, and we don't know how it acts.

**TREATMENT**—Important to ascertain cause. See if bowels are constipated, and if food was digestible, or if evidence of catarrh, and if cough give anodyne medicines, as paregoric or tincture opium, or one of the bromides 5 grs., and if patient has it often give 4-5 grs. of hydrate of chloral for several times which will often remove morbid changes.

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## BRONCHITIS.

An acute catarrhal inflammation of the mucous membrane of the Bronchial tubes extending at times to the sub-m. m.; extending at times to trachea but mainly of large and middle sized tubes or the smaller bronchi, and then it is very serious, and is called Capillary Bronchitis. Happily this is rare. Bronchitis is either *Primary* or *Secondary*.

**CAUSES:** Cold, or exposure, or irritating gases. Sometimes it accompanies Rheumatism, or obstructive cardiac diseases, Exanthemata. May be *acute* or *chronic*. Croupous Bronchitis is where croupous exudation is poured out and takes the form of casts.

**Bronchitis, Acute or Catarrhal.**—Most common of all forms of catarrhal inflammation of m. m. of larger and medium sized Bronchial tubes, with a catarrhal exudate and general inflammation; change extends from nasal and pharyngeal membrane, and occurs coincidently with laryngitis. At times some reason that it begins in vesicles and extends up, but as yet this is unproven, and Dr. Chew thinks that when there is both (Laryngitis and Bronchitis) inflammation only is coincident.

**MORBID ANATOMY**—Few opportunities to examine simple cases, as almost all recover, yet in the young from 2 to 4 years and the very old it may be fatal. Hence opportunity to examine after death, as is also the case when death is caused by diseases which Bronchitis accompanies—e. g. phthisis, typhoid, etc. In the first stage m. m. is affected, somewhat







redder, dryer and swollen, and there is a clear, transparent mucous on affected membrane, glassy in character like white of egg. In the young subject it tends to affect the smaller tubes and vesicles, also in the old subjects. Somewhat later the air cells are involved and pus forms; hence expectoration is muco-purulent, yellowish or greenish in color. Bronchial tubes are lined by ciliated epithelial cells, and in health cilia wave to and fro and this facilitates respiration. Now in dry stage the cilia are stiffened and air can't get in freely; hence the sonorous and sibilent rales of large and small tubes respectively. The changes are on both sides; hence in general this is a Bilateral disease, and so marked is this rule that when rales are unilateral, especially if at apex, they very strongly indicate Phthisis. In a young subject after death by Bronchitis you may find pulmonary collapse, because in such weak subjects air can't get in the vesicles, as the mucous plugs up the smaller tubes and acts as a ball valve in which air can get out but not in.

CAUSE: Infancy and old age are spoken of as predisposing causes, as resisting powers are then less. Debility of any kind predisposes, also chronic pulmonary diseases, Chronic Obstructive, Heart trouble, exciting cold occupies first place, impure air, changes in temperature exceedingly common and is greater than extreme cold or heat, found most often in spring or autumn, and even in midwinter, owing to great vicissitudes in temperature. Not so common in other diseases. In measles it is part of clinical history—less commonly met with in scarlet fever; very frequent in typhoid, whether m. m. is invaded by Bacilli or whether typhoid simply relaxes it can't be said positively.

SYMPTOMS: Coryza, running of eyes, afterwards some degree of sore throat, hoarseness, some chilliness, some degree of fever (101 to 102), seldom above 102: (this is an important diagnostic point, as in pneumonia temperature rapidly runs up.) Some pain is felt in chest but not very severe nor is it a grave symptom. Important to note situation, namely, sub-sternal region and pain is not acute nor severe;

in pneumonia pain is dull but severe, and situated on affected side. Cough is a prominent symptom and differs; at first it is dry, hacking and cutting and initiatory, while later it is moist and expectoration is severe. Cough most severe when lying down, due at times to tickling by elongated uvula, but can't always explain. In a few days cough is moist and expectoration begins, which is at first glassy and then gets thicker and muco-purulent. Lasts 3 to 4 days, to 2 to 3 weeks, and if longer becomes chronic.

PHYSICAL SIGNS.—1st or dry stage—sonorous cooing and sibilant hissing, which originates respectively in larger and smaller tubes and is due to physical changes, as noted above, occur on both inspiration and expiration, while in pneumonia the special râle is on expiration, and in the moist stage we have coarse and fine and mucous rales in large and fine tubes respectively. Percussion gives us no result ordinarily, only at times. In young and old people there may be inability to expectorate and the secretion gravitates in lower tubes and lessens the percussion resonance. This can be removed by giving stimulating expectorant. Remember, mild cases may not have any signs at all.

1 DIAGNOSIS—*Pneumonia* of-  
ten begins with chill.

2 Unilateral.

3 Fever high, 104 to 105.

4 Pain heavy, severe, but not acute.

5 Pain situated on affected side.

6 1st stage, crepitant rales.

7 2nd stage, tubal breathing.

1 *Pleurisy*—Fever high, 102 to 103½.

2 Pain lancinating at first and situated around nipple.

3 1st stage, friction sound.

4 After effusion there is much loss of respiratory sounds and dullness is complete.

*Bronchitis*.—No chill.

Bilateral.

Seldom above 102.

Pain not severe nor acute.

Pain situated substernal.

Sonorous & sibilant rales.

Mucous rales large and small.

*Bronchitis*—Seldom above 101 to 102.

Pain not severe.

Sonorous & sibilant rales.

Not so in this.







*Phthisis—Bronchitis*—It should be remembered that in diagnosing Bronchitis the disease which is unilateral and limited to apex is Phthisis, almost invariably; when diffuse and bilateral is Bronchitis.

PROGNOSIS—Tends strongly to get well—may terminate fatally in young or old—but even here with good care tends to cure by resolution, but next may become chronic, or last Capillary Bronchitis.

TREATMENT—May get well alone, but never should be lightly regarded, as may extend to small tubes and end fatally. Confine patient to moderately warm room; give 10 grs. of quinine, and at bed-time 10 grs. Dover's powder, or one-sixth gr. morphine; the Dover's is best as it is anodyne and diaphoretic. Also take hot foot bath and it may abate, and if not may have to resort to something to relieve cough; very good simple remedy is the Brown mixture (Mist Glycyrrhiza comp. which is composed of ext. Licorice 438 grs. syrup 1½ oz., sweet spts. nitre 1 oz., paregoric 3 oz., acacia 3 oz., wine of antimony 2 oz., water to make 2 pints.) Counter irritation of chest is good by application of mustard plaster; warm inhalations are good, (co. tinct. benzoin and tinct. hyoseyamus equal parts, put two teaspoonfuls in 4 oz. of boiling water), and if disease tends to become chronic 8 to 10 grs. of quinine should be given daily. May add gr. v. Chloride of ammonia at a dose to the Brown mixture. Iron tonics should be given, or iron, quinine or strychnine elixir, or capsules of Vallet's Carbonate of iron, strychnine and quinine. Becoming chronic is indicated by second stage being prolonged and in such cases there may be a gouty or rheumatic diathesis, and if not in patient may have existed in some of his forefathers, so in many cases a trial of anti-gout or anti-rheumatic treatment will cure. Cups dry or turpentine stupe may be used instead of sinapism.

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## CHRONIC BRONCHITIS.

Is as fully frequent as the acute form; like it it may be either primary or secondary.

**CAUSES:** It may be brought about by breathing irritating vapors constantly. It is thus often caused in artisans whose occupation compels them to breathe in fine particles, as in stone-cutters, knife-grinders, etc. It may be secondary to some diseases as acute phthisis, obstructive Cardiac disease, Gout, Rheumatism, or may follow repeated acute attacks, or non-recovery of acute. Often associated with Eczema and Psoriasis; Chronic Alcoholism is a frequent cause.

**MORBID ANATOMY:** Changes are notable in color of mucous membrane. It is darker, often having a slaty hue when brought on by inhaling particles in air: purplish when there is cardiac trouble. The follicles are hypertrophied. Ulceration of membrane may occur. An increase in the sub-mucous connective tissue is not uncommon, therefore calibre of tubes is decreased in diameter. In old subjects the tubes have been found to be in a state of calcification due to deposits of earthy salts, so that they resemble pipe stems. Bronchial dilation (Bronchiectasis) sometimes occurs. In syphilitic patients gummy tumors are found in the mucous membrane. Emphysema is often caused by it also, and if emphysema is primary it is one of the most active predisposing causes to chronic Bronchitis.

**SYMPTOMS:** Cough and expectoration are the most obvious symptoms; cough is almost incessant, less in summer and greater in winter in milder cases. Expectoration may be small in amount (dry catarrh) or may be persistent <sup>or</sup> of profuse (Bronchorrhoea). The temperature only slightly or not at all elevated. Chronic Bronchitis is much less troublesome in summer than in winter. A not infrequent though not constant symptom is fetor of secretion and breath; cough extremely obstinate; pulse about normal.

**PHYSICAL SIGNS:** Percussion note usually clear, unless there is an accumulation of secretion in the tubes, when the note is a little dulled, but when the accumulation is gotten rid of the note becomes normal. Expectoration removes this secretion. Auscultation gives dry cooing and sibilant rales; coarse and fine mucous rales are heard when there is







much secretion. Expiration considerably prolonged, due to difficulty of egress of air from lungs, on account of lessened calibre of the tubes. Respiration has wheezing sounds. Lannael compared the many sounds heard to singing of caged birds all together.

DIAGNOSIS: Chronic Bronchitis is to be distinguished mainly from Phthisis. *Pneumonia* having high temperature and *Pleurisy* having dullness on affected side, and when much effusion loss of respiratory sounds. *Phthisis*, when a disease of early life is generally unilateral; and when bilateral one lung is more affected than the other, and signs usually limited to the upper part of the lung in Phthisis, while in Bronchitis there is a tendency to localization and it is usually a disease of advanced life. The microscope will render diagnosis as it will show bacilli.

PROGNOSIS: In itself is ~~very~~ <sup>good</sup> unusually fatal except in very old and very young persons where they are, figuratively speaking, drowned in their own secretions. Emphysema and Bronchiectasis are caused by it.

TREATMENT.—Is partly hygienic and partly medical. A mild and warmer climate is very beneficial. Florida's climate, especially in winter, on western or gulf coast is best. Woolen underclothing should be worn all the year around. Exposure to night air and winds should be guarded against. Giving up the trade which caused trouble often leads to recovery. The underlying cause should be always looked into, and removed if possible. If due to gout or rheumatism their proper remedies should be used. Steam inhalation is always beneficial. If there is much irritation and cough, deodorized tincture of opium and fl. ext. hyoscyamus is used viz: Tinct. opii. deod. oz. i, ext. hyoscyamus fl. oz. i, tinct. benzoin co. oz. i, mix; sig: add 1 teaspoonful to pint of hot water and inhale t. i. d. When expectoration is very profuse one drm. turpentine to oj. hot water, or eucalyptol in same quantity is often beneficial. Turpentine and eucalyptol inhalation is used when secretion is profuse. All cough mixtures should be withheld if possible, as they in-

terfere with normal secretion of alimentary canal and cause constipation. The free administration of potas. iodide often gives strikingly good results—it is especially indicated where there is scant secretion and evidence of bronchial narrowing, as asthma, gr. v to vi t. i. d. When trouble is very chronic the tinct. chloride of iron does much good as addressed to the impaired quality of blood. Counter-irritants, as turpentine liniments and mustard plasters may be beneficial. Where there is sudden profuse bronchorrhoea, the bold use of quinine hydrobromate, xx grs., used hypodermically, may wrest the patient from death. Give stimulant in form of hot whiskey and strychnine hypodermically.

## BRONCHIECTASIS.

### A DILATATION OF THE BRONCHIAL TUBES.

Often associated with chronic bronchitis, may be general or partial, (limited to one part.) *Cylindrical, Sacular and Fusiform* Dilatation. The various form blend together to a certain extent.

CAUSES: Predisposition. Probably only one is Chronic Bronchitis, as it depends upon weakening of Bronchial wall. Chronic Bronchitis may not only act predisposingly, but may also be the exciting cause, as the tube is more or less obstructed, and the prolonged expiration which is produced tends to dilate tube already weakened. But probably the most prominent exciting causes are Pulmonary collapse, or Chronic Interstitial Pneumonia, or Fibroid Phthisis. More commonly found after middle life, yet it prevails in childhood when it is most frequently caused by atelectasis or collapse of the lungs.

SYMPTOMATOLOGY: Are obviously those of Chronic Bronchitis, but in addition have markedly fetid expectoration, due to stagnation in dilated cavities. The same occurs in gangrene, but there is a difference in gangrene more rare, and odor of gangrene is characteristic, and expectorated matter may be bloody, and the microscope shows decomposed







shreds of pulmonary tissue and blood corpuscles and cancer cells.

**SIGNS:** At some time in the course you find dullness over dilated bronchi, and at times clear, as results are negatived by percussion if near surface. Have resonance if deep, dull auscultation, and bronchial blowing almost cavernous. If fluid is present have gurgling, viz., large mucous rales, but if recently expectorated no rales. These sounds are same in cavity of Phthisis and sometimes it is utterly impossible to tell difference. *Most important point:* In Phthisis you have long process of wasting. Hectic is gradual and advance of disease and most important is presence of bacilli, but at times can't find them, but continue to search and they will be found sooner or later. Again, if there be cavity it is usually at top, and signs are most clear at anterior and posterior walls, if midway is usually associated with cavity at apex, but should you get signs at lower postpart of lungs it is usually dilation.

**PROGNOSIS**—In general cannot be cured, but not uncommon for children to get well if it has not lasted too long; but in old persons no cure possible after once present.

**TREATMENT**—Same as Chronic Bronchitis and also some mildly stimulating antiseptic to correct fetor. Creosote 1 drop to oz. 1 water sprayed frequently during the day. Eucalyptol 15 to 20 drops in form of spray in water with alkali, or better inhale it zi. to oj. of hot water. But constitutional measures are necessary; keep them steadily on iron; nutrition is promoted by cod liver oil, preparations of malt, etc. Arsenic may do good—Fowler's solution 5 m. t. i. d. as it promotes respiratory power is one cause.

## CROUPOUS OR FIBRINOUS BRONCHITIS.

(Plastic Bronchi). Inflammation of the bronchial mucous tract, associated with exudation of fibrinous or mucous membrane, and probably in it at times. Plastic inflammation. It occurs independently from Laryngeal Croup

and apparently don't show presence of diphtheretic microbe. Yet at times it does occur from dyptheretic microbe and extends up to larynx or may not. May be acute or chronic, and may affect large or medium size, or the smaller tubes.

**MORBID ANATOMY:** Exudation is distinctly fibrinous. Sometimes complete casts are expectorated and are seen by floating in water; the casts of larger tubes are hollow while in smaller tubes are apparently solid. Under microscope find fibrillated and granular matter and at times fat globules, also blood cells red.

**CAUSES:** Perhaps some constitutional tendency; most common in females some practitioners say, others say more common in the male, but as common in one sex as the other. Often associated with fibroid Phthisis and no cause yet known to distinguish why. Catarrhal and fibrinous forms are caused at different times and in different persons.

**SYMPTOMOLOGY:** Apt to begin with fever generally higher than ordinary bronchitis, 102 to 103; sense of constriction in chest, causing dyspnoea, which begins early and is due to stoppage of smaller tube. Sometimes after attack of urgent dyspnoea casts are gotten rid of and for a time person breathes better, but it may occur again and advance to fatal termination; yet at times does not, and patient gets well. Cough is dry and hoarse, and after violent paroxysm fibrinous casts may be expectorated. Only thing that demonstrates conclusively is the expectoration, which, if floated out on water, has the appearance of the branched bronchial tubes.

**PHYSICAL SIGNS:** Very much like ordinary bronchitis, yet don't have crowing or sibilant rales; nor do we have moist rales, but often sound is brought to the ear resembling a flapping sound, and with this a feeble respiratory murmur. Constantly but occasionally from the co-existing bronchitis (stenosis or narrowing of the tubes.) At first are dry rales.

**DIAGNOSIS:** Chiefly from Catarrhal. Greater fever and more urgent dyspnoea and the above signs, but only made positive by casts seen in expectoration.







PROGNOSIS bad. In acute form in children nearly 70 per cent. prove fatal. In adults and chronic forms somewhat more favorable.

TREATMENT: Some recommend venesection, but Dr. Chew says it does more harm than good. Most rational system of treatment is to give supporting medicine and diet and local measures. Use those that tend to loosen membrane and get rid of it, viz., Inhalation of hot vapor which has been rendered alkaline. Best mode is to make tent of sheet and put hot water in basin under it and throw in at times handful of unslacked lime. Patient must close eyes as it may irritate them. Another treatment advocated is local application of Trypsin which dissolves the membrane formed—must use it with alkali, viz., 10 gr. Trypsin and 5 to 10 gr. Bi-carb. Soda to oz. j. water used as spray often. Again, some think water of ammonia good; the trouble is that it is so irritating that it can't be inhaled, and if made so it can be inhaled it is too weak. Kali Iodidide, 5 to 10 gr. t. i. d. may do good. Emetics of salt water, Alum, Zinc Sulphate, etc. If attacks occur change of climate to warmer and dryer climate is indicated. For dyspnoea paroxysms emetics are of service at the beginning of the treatment as give less depression, 10 gr. zinc sulphate, alum 1 dr., or Pulvis Ipecacuauna gr. 20. (Dr. Howard's lectures on Capillary Bronchitis.)

## PULMONARY HEMORRHAGE.

*Hæmoptysis-Broncho-Pulmonary Hemorrhage.* In most cases if much blood comes up it usually comes from bronchial tubes. Common thought of laity is that blood vessels have been ruptured, but it is more likely to be from leakage.

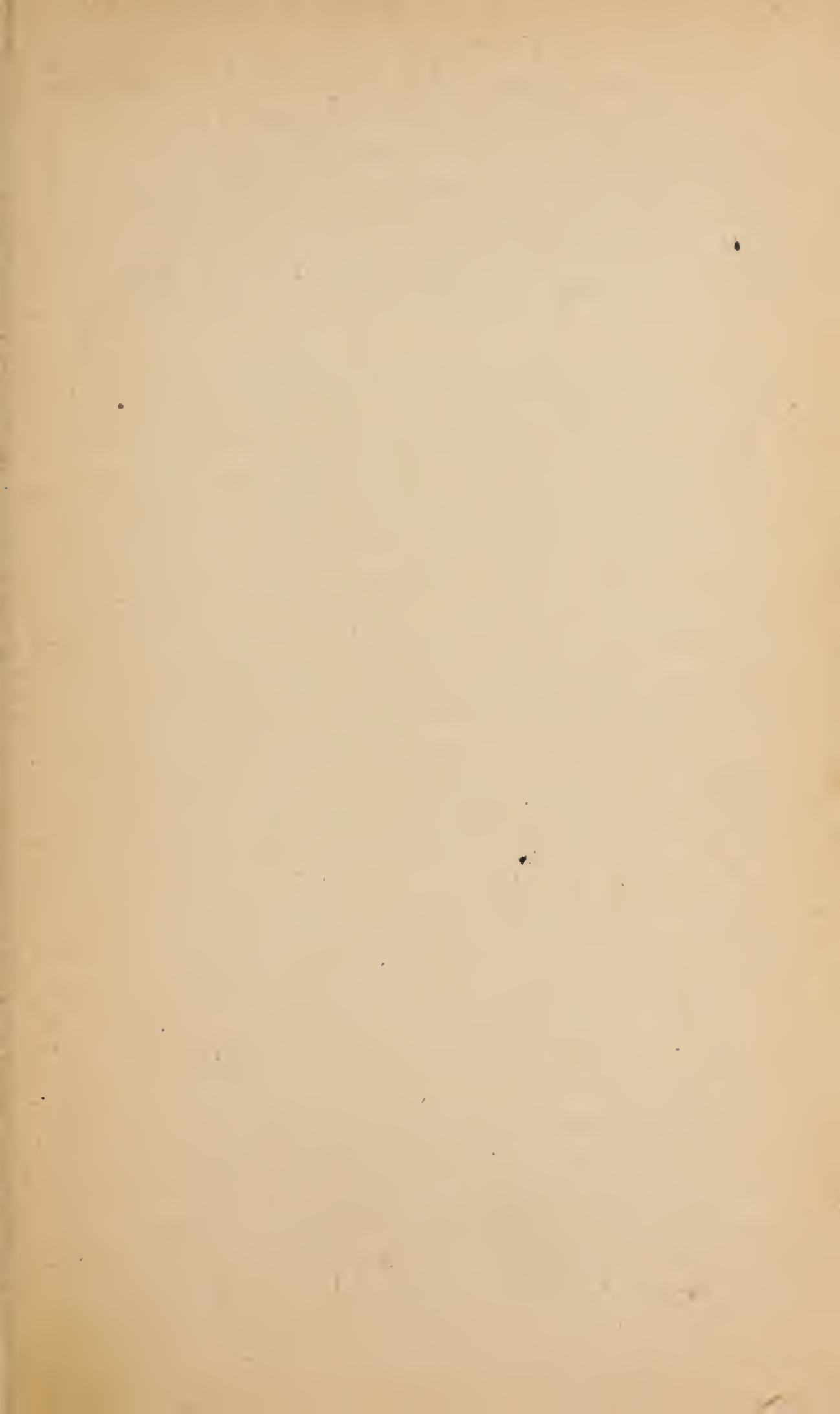
SOURCE OF HEMORRHAGE: At times have erosion of blood vessel in cavity and profuse hemorrhage, yet this is exceptionally rare, as in cavity vessels are nothing but fibrous cords, from atrophy, as they have degenerated. So seat of bleeding is bronchial mucous membrane. Rupture is very rare and when such does occur it is called *Pulmonary Apoplexy*.

also occur from rupture of aneurysm in lung but most frequent cause is congested membrane, which produces leakage, and this occurs most with advanced Phthisis.

MORBID ANATOMY: If case be examined after death it will be ascertained that it is caused seldom directly, yet sometimes ~~parts~~ parts from which blood flowed will be swollen and flabby, and parts adjacent hyperaemic; on lining ~~is~~ <sup>ARE</sup> seen pale but pinkish spots, which are from blood in the vesicles. At times tube may be filled by clot.

CAUSES: Most frequent in some disease that produces weakness of capillary walls and over-distention, and generally connected with tuberculous predisposition, and hence may be hereditary. Most frequently the direct exciting cause is over-exertion. Most commonly occurs from 15 to 30 years. At times irritating gases seem to cause it, but doubtful. Rarified air of mountains seem to cause it; but ordinarily there is some predisposition to hemorrhage, hence not advisable to send Phthisical persons to an elevation too high. Sometimes it is vicarious to suppressed menstrual flow, at times there is some truth in this, but not as much as many authors say. Dr. Chew thinks that the constitution is the cause of the menstrual suppression—hence beware of giving a prognosis in suppression ~~x~~ mensium at too early a date.

SYMPTOMOLOGY: Symptoms vary with amount of blood loss. At times small and frothy, and is to be distinguished from rusty. Sputum of pneumonia is easily recognized as it is rusty; it is mixed with exudation and hemorrhage is not in large quantity and haemoptysis is often accompanied with sense of uneasiness about substernal region. Uneasiness is felt but not acute pain on inspiration, and almost simultaneously a sense of trickling and the salty sweetish taste about mouth, accompanied by cough to get it up; quantity varies from one oz. to a pint. Countenance is expressive and the patient is very weak and out of proportion to amount of blood lost. Patient seldom dies from it directly. After hemorrhage small coagula may be coughed up for several days. Not uncommon after hemorrhage for fever to occur,







pulse grow quick and signs of broncho-pneumonia occur, and that is exactly what does occur and Phthisis may now fast begin; so the question arises, does hemorrhage cause Phthisis? At times it does follow when there is no predisposition, but Dr. Chew says most often there is predisposition or pre-existing tubercular trouble. Dr. Chew cites cases resulting from stabs and also from inhaling blood from extracting tooth.

DIAGNOSIS—Made obviously by symptoms and the appearance of the blood and often knowledge of pre-existing phthisis, but never examine physically the chest until about 4 or 5 days after hemorrhage. In *Epistaxis* usually see the flow from nose and that which comes from throat is dark and coagulated. *Hæmatemesis* blood is ejected by vomiting and blood is dark and not frothy, but clotted and is acid and not alkaline as in hæmoptysis. *Bursting of Aneurism*: Hemorrhage is profuse and death soon follows, there is previous history of Aneurism, but if strange person can't always tell, so treat to stop bleeding, this must be considered though Aneurism is comparatively rare.

PROGNOSIS—Seldom immediately fatal. No doubt in most cases it is the indication of a disease that will later cause death.

TREATMENT—Stop it as soon as possible. If slight will generally stop itself, but don't wait; give small Hypodermic of Morphia as it relieves nervousness and checks cough; give always. Keep patient lying on side if possible. Then give astringent—some say Aromatic sulphuric acid; some say two-third gr. Acetate of lead with morphia; but Dr. Chew says he does not think that these astringents are any good, but Ergot does good by contracting blood vessels—give 20 gtts. fluid extract hypodermically every <sup>3-4</sup> hours, or one gr. Ergotin~~x~~. Again, applications of cold to chest, by means of ice bag; apply for ten minutes and then remove and again put on. Dry cups at times over affected parts of chest may do good.

## EMPHYSEMA.

May be vesicular, or interlobular. 2nd. Air in the tissue between the lobules. 1st. Air present in vesicles in undue amount. In interlobular it is often found beneath the pleura, getting there simply by continuity of tissue, and forms blebs, and is called *Sub-pleural Emphysema*, which is often a sequence to interlobular, but at times comes from some external injury, viz.: Stab or fractured rib resulting in rupture of air vesicles. Violent fits of coughing give rise to interlobular form, but remember that preceding it is vesicular, and in fact both may be found present frequently in whooping cough. When once air gets in the interlobular spaces may go to mediastinum and get out in neck and even on chest and abdominal wall, and this disappears, or as said by some, absorbed, but not by the blood vessels, nor is it satisfactorily explained to say that it gets in lungs. These cases don't require medicinal treatment, but if blebs in tissue of neck or belly use moderate pressure; but it is not as frequent, nor is it as important as vesicular. Emphysema is pressure of air in abnormal amount in vesicle, or air in sub-pleural interstitial connective tissue. It is a chronic affection and comes on slowly, but when once present it remains.

**Vesicular Emphysema.** Is of greater importance than interlobular as it is seen more often. When it occupies any considerable part of the lung it is generally associated with Bronchitis and is then called *Idiopathic*. Yet at times it occurs in patches as a result of consolidated portions, then it is called *vicarious, compensatory, or symptomatic*. Some say that tubercle is incompatible with Emphysema, but Dr. Chew says that symptomatic Emphysema may be caused by tubercle. Yet there is some truth in the statement that tubercle is not likely to deposit in a portion of lung emphysematous, probably due to the circulation being interfered with. Often associated with spasmodic asthma.

**SYMPTOMS**—Idiopathic—substantive labored breathing al-







most always present, and on exertion is increased; along with this the *expiration* notably is prolonged, and instead of occupying one-third of respiratory act it occupies just the reverse and is *longer* than the inspiratory. Effort to expel air is wheezing in character. Cough is ordinarily of paroxysmal character, consisting of spasmodic expiratory efforts. Cough due to Bronchitis being present. *No fever* unless this is aggravated by acute Bronchitis. In marked cases there is venous congestion of the surface of body, chiefly of the veins of the face and neck, due to crowding back of blood in right heart, thence in venous system at large. The right heart may be so much enlarged that anasarca may occur, and also congested and enlarged liver seen on percussion. Also congested kidney with albuminuria. In mild cases none of the above symptoms may occur, but only trouble in breathing, and in fact at times only seen on exertion. Although there are symptoms of idiopathic forms yet when the compensative form extends over seat a portion of lung will also appear involved.

ACUTE—May have some Emphysema in whooping cough in children, but fortunately the repair power is very great so that they get over it.

MORBID ANATOMY—Dilation of vesicle with or without rupture, and when this does occur several vesicles are fused together. Still in mild cases they may not rupture. The dilation causes loss of elasticity, hence the prolonged expiration. These changes explain the symptoms from purely mechanical principles. Appearance of fat granules and other evidences of degeneration are seen in the vesicle walls. Air stagnates, hence dyspnoea. Pressure of distended vesicles obstructs pulmonary circulation and this increases dyspnoea, when extension causes blood to dam in right heart, producing enlargement of heart, engorgement of liver, kidney, etc., also Anasarca. The larger the amount of lung affected the greater the dyspnoea.

CAUSE—Lannaec was first to point out nature of emphysema and the cause of dyspnoea, but while he did a great

deal he was not altogether right, as he regarded the inspiratory effort more powerful than expiratory, and contended that the more forced the inspiratory act it would let in air, while weak expiration could not get air out and thus distended lobule. No doubt that obstruction acts as cause of emphysema, but it acts differently and instead of causing dilation the obstruction causes collapse of lobule, which in turn causes vicarious emphysema elsewhere. (Cases that occur extensively without bronchitis.) The general view is that there existed some degenerative process, mal-nutrition in lung previous to its occurrence, which directly resulted from cough or strain on lungs from prolonged expiration. Cause was thought by Rogers to be fatty degeneration, while Jenner thought that it was fibroid degeneration.\* Hereditary tendency is also a predisposing cause. But some cases depend on fatty, fibroid, or syphilitic changes, anything that weakens walls. Exciting cause is the prolonged expiration, by playing on wind instrument or heaving efforts, as in lifting great weights, but perhaps more common cause than either of these is Bronchitis, which comes from neglect, chronic, or the continued cough gives rise to Idiopathic Emphysema. Now if secretion is great it gives rise, by stopping up other vesicles and causing dilation of others, to what is called *compensatory Emphysema*, hence inspection shows when there is cardiac dilation up or down and to right, but in some cases absent, as overlapping of lung. Breathing is chiefly abdominal.

DIAGNOSIS—Depends and is made upon study of symptoms and physical signs together. Inspection gives increase in size of upper part of chest, which is barrel-shaped; lower part is shrunk, greater rotundity of shoulders; respiratory movements of upper part of chest are lessened and ribs and sternum are moved together. *Percussion resonance is increased*, there is vesicular tympanitic resonance. There is diminished extent of cardiac dullness as the lungs cover the heart. *The normal area of cardiac dullness* is in the centre of sternum from on a level of 4th rib down mid-sternum to opposite the







apex beat, then draw line to apex beat, and then a line from there to sternum on level of 4th rib, media line, thus forming a triangle. *Expiration is prolonged*, and often during breathing there is a heaving of shoulders and the distance between ribs is greater below than normal. There is *enfeebled respiratory murmur* because air vesicles are full and can't receive any more air, and owing to lack of elasticity air is driven out slowly and tediously, hence *feeble respiratory murmur and prolonged expiration*. *Diagnosis from Phthisis*: In Phthisis there is Hectic Fever, wasting, and especially dullness on percussion, while in Emphysema no fever and increased resonance. Attacks of spasmodic asthma often occur in Emphysematous patients. There is a form of Emphysema occurring in old people called *Senile or Atrophic Emphysema*. In this the vesicles are not bulged out, the walls are thin and atrophied hence more air, chest not distended, little percussion resonance.

PROGNOSIS—Seldom immediate danger, and generally lasts a long time, but may cause other troubles by backward damming of blood that may shorten life. In early period a great deal may be done to prevent development further.

TREATMENT—Symptomatic—Bronchitis, which is so frequently present, demands urgent treatment, because as long as it lasts it gives rise to backward pressure in lungs, and when this is cured, the extension of the emphysematous process will at least be retarded to some degree. Treat as any other bronchitis it will not only do good by relieving bronchitis but also do away with cough, which is the most active cause to the extension of the disease. One of the best cough reliefs is Brown Mixture, which is soothing, and a gentle diaphoretic, and often advisable to combine with each dose five-~~tenth~~ grains of muriate of ammonia. Iodide of potassium, by its absorbifacient action, does good to the bronchitis, and by its neurotic action does prevent asthmatic attacks. Begin with grain v, and if stomach can stand it increase to 10 grains—give Brown Mixture as mentioned. Asthmatic attacks should also be treated. Further look out

for possible complication. It is of great importance to relieve constipation; if the abdomen is full it interferes with motions of diaphragm. Give simple aperient, as compound licorice powder, small doses of Epsom salts, (but Hunyadi water is better, a wine glass before breakfast.) Now if it tends to lose its effect add warm water to the same dose as it tends to increase its efficacy. If stomach is dilated with gas give bitter tonic as Comp. Tinct. Gentian, or H C  $\ell$  gtt. x to oz of Fairchild's essence of pepsin. Give one teaspoonful in water after each meal. If flatulence is very great add to each dose Tinct. Nux Vomica, gtt. viii. In cases which have lasted for considerable time there is more or less interference of circulation, and hence right heart is dilated and soon as this is present use digitalis, probably infusion is best, but it is open to objection, as has to be given in larger bulk, and if indigestion accompanies it Tinct. Iron 10 to 15 drops t. i. d., or every 4th hour is better. Dose of infusion is dessert-spoonful, give until symptom disappears and then stop, and if they recur begin again, but don't push. As directed to actual disease itself of all remedies is Iron, which when used timely tends to hold disease in check by correcting the depraved state of blood. Best preparation is Tinct. of Chloride xv to xx gtt. in water t. i. d. after meals. Good mode of giving it is in Basham's Mixture (mist. Ferri & Ammon. acetatis) as it is not only a tonic, but has mild diuretic action, and is especially useful when digitalis is needed; dose two teaspoonfuls, t. i. d. Again certain mechanical measures may do a great deal of good by supplying fresh air and removing stagnated air from the vesicles. Waldenstein's apparatus is very good in very severe cases, but all patients can't afford it. Patients are made to breath very condensed air from receptacle. Now after breathing in he breathes out in a receptacle where there is rarified air.

## SPASMCDIC ASTHMA.

Affection of smaller bronchial tubes in which they are af-







affected by spasmodic action which lessens calibre and produces paroxysms of dyspnoea. Calibre of tube is lessened not mechanically, but by spasmodic contraction of circular muscular fibres in smaller tubes. Asthma often applied to dyspnoea ~~is~~ caused by other affections, as Cardiac Asthma, especially in mitral stenosis, which backs blood back in lungs, but lay this term aside and use only above.

MORBID ANATOMY—No changes are detectable after death to explain the cause of paroxysm, as it is nothing but spasmodic action which ceases after death. Of course it is often associated with Emphysema and Chronic Bronchitis, and then find changes according to these respectively.

CAUSES—Neurosis in which heredity has a good deal to do, 40 per cent. estimated from *heredity*; may occur in first generation or may skip one or more. May occur at any stage of life. *Exciting Causes*: Of these greatest is irritation of bronchial mucous membrane, as by simple dust of street at times, some drugs, and among them ipecac, most liable to cause it where persons are susceptible; burning sulphur often produces it. Again cases known as Hay Asthma, probably due to emanation of something from hay. Rose Cold from roses. Pollen from various plants, notably Hyalanthus plant. Sometimes agencies the nature of whose power of production is unknown, yet it is true that some people can live in peace in some places and not in others. All these causes have to be studied. Certain *reflex causes*—e. g., Nasal polypi, as seen by the Rhinoscope. Some persons will have their attack by eating something that does not agree with them. Also constipation and heavy night meal. Hemorrhoids and Menstrual period also. Some diseases in which Asthma is most likely to occur are Chronic Bronchitis and Emphysema, often associated with the retrocession of Chronic Eruptions of skin, Gout, Rheumatism, etc. Causes may be divided into, 1st, Irritating; 2nd, Reflex; 3rd, Occurring as Complication, and 4th, Cause the nature of which is obscure.

SYMPTOMATOLOGY—In intervals between attacks, some

at times have precursory symptoms as languor, or drowsiness, for a few days before attack, or on the other hand there may be extra buoyancy, but mostly attack begins after midnight without any premonitory symptoms. Person goes to bed, sleeps quietly, and then it comes on and patient may have a wheezing a short while before he awakes, or may suddenly awake and sit up in bed, lean forward, with mouth open, suffering from the most intense dyspnoea, face and neck turgid and at times whole body is cyanotic, speaks hastily. Expiration especially prolonged and wheezing. Pulse is small, weak, rapid. Person leans forward with elbows resting on knees, so as to bring in all voluntary muscles of respiration. Again, patient wants to go to window, especially in winter, as when air is cold and condensed, and strange to say, he may sit for hours at open window without taking cold, probably due to pre-occupation of nervous system. After attacks patient will often pass large quantities pale limpid urine. Attacks may last from few minutes to two hours, and in rare cases a whole day. As attack passes off patient begins to expectorate tenacious mucous, which at times takes a spiral form and of white pearly appearance, called *Kishman's pearls*, and on this account Kishman said that it was a localized bronchitis. Although at times the case is not universally so, as often there is no expectoration at all. Again, *Leiden* holds that octahedra crystals, which are at times found but not always, produce the irritation, but it is often impossible to say in chronic cases what produced the attack. Expectoration is at times watery and very profuse. *Bamberger* holds that the seat of spasm is in the diaphragm, but it is the effect rather than cause which is the spasm of bronchial tubes.

PHYSICAL SIGNS—Cooing and hissing sounds are heard over the chest, air moves with less celerity and the calibre is lessened. At the time the attack is passing off there is a marked outflow of serum, thus see that the affection is in lungs. Expired air in midst of attack contains about 10 to 12 per ct. more of  $\text{CO}_2$ . During paroxysm upper part of chest







moves very little, abdominal breathing is marked, expiration is prolonged. *Percussion*. There is slight increase of resonance, especially if associated with emphysema. Pitch is lower. *Auscultation*: Respiration is feeble and as air is expired at times it takes a jerky nature. Bronchial rales, sibilant and sonorous often heard. Later in attacks ~~A~~ften effusion occurs; have moist rales, large and small.

DIAGNOSIS—By signs and symptoms. (1st) *Laryngeal spasms* are more common in children; obstruction in trachea, therefore obstruction of inspiration: ASTHMA may be in child, and if so the spasm is on expiration. (2nd) *Capillary Bronchitis*—Dyspnoea is sudden, Dyspnoea on both inspiration and expiration. Generally preceded by history of Catarrhal Bronchitis. Higher fever than in Catarrhal Bronchitis—subcrepitant rales. ASTHMA—Dyspnoea is sudden, spasm on expiration, no fever, no subcrepitant rales. (3rd) *Croup*, fever, dyspnoea on inspiration: ASTHMA, no fever, dyspnoea in expiration. (4th) *Angina Pectoris*: each distressing. Hours of intense pain with distress, no rales in lungs, attacks usually brought on with suddenness of moving; Asthma, no pain with distress, have rales, attacks usually occur at night. (5th) *Pulmonary Oedema* is always associated with cardiac or Bright's disease, bronchial rales at beginning, no dry rales, dullness especially below and behind; Asthma is not associated with Cardiac or Bright's disease, bronchial rales at close, dry rales, either normal or exaggerated. (6th) *Emphysema*, both often associated, rotundity and barrel chest, vesicular-tympanitic resonance; Asthma, shape of chest and resonance not so marked, usually history of previous attacks.

PROGNOSIS—Seldom or never the immediate cause of death. Patients are proverbially long-lived, but Chew says don't know whether true or not, for if attacks last long and occur frequently person is liable to Emphysema, and thus cardiac dilation, etc., may be brought on. Asthmatic subjects are liable to other diseases and Bronchitis is more severe in them.

TREATMENT—Two objects; 1st, arrest of paroxysm; 2nd, prevention of return of paroxysms. 1st, make a rule to ascertain the exciting cause, and if due to heavy meal at night give a mild emetic; warm tumbler of salt water or mustard water may act promptly, 15 grs. Pulv. Ipecac, 10 to 20 grs.  $\text{ZnSO}_4$ , Powd. Alum, etc. Again, if constipation, administer quickly an enema and then keep bowels open. Put patient in most comfortable position, but as a rule he will do this himself. But if attack is very severe try to relax spasms as soon as possible, and probably best is hypodermic of morphia, which will usually act in from 5 to 10 minutes. Generally one-sixth of a grain or V to VI minims of Magendie's solution and to this add a little Sulphate of Atrophia 1-150 gr. to dr. j. Magendie, which contains grs. ii of Morphia to dr. j. Rx Morphia Sulph. gr. XVI, Atrophia Sulph. gr. one-third, Acid Carbol. gr. i, Glycerine dr. j, Aqua drams vij. Dose, m to vii, hypodermically. At times may have to give  $\frac{1}{2}$  gr. morphia to patients accustomed to its use, but always give smaller dose unless you know by experience that more is required. Some patients are benefitted by depressing agents, as Wine of Antimony, m XV-XX, until nausea occurs and every 30 minutes. Sometimes patient will not take opium, so then give as above, or 1-8 gr. Tartar Emetic, powd. Ipecac. 5 to 10 grs., or Lobelia fl. ext. 10 min. every half hour, Tinct. Belladonna 10 gtts., or Belladonna in some form. Stramonium root or leaves smoked often gives striking results. At times given internally as tincture, but not as good as leaves smoked in pipe, which should be drawn down in lungs. Himrod's Powder for Asthma, a proprietary remedy, contains  $\text{KNO}_3$  Stramonium, etc. Nitrous paper, viz: strong solution of nitre soaked in blotting paper, burn and inhale fumes often from it as it does good. Tablespoonful of nitre to  $\frac{1}{2}$  ~~Q.~~ water and let paper dry. Chew does not like bromides, as they act too slowly. Nitrite of amyl will relieve attacks. Chloroform, although it relieves at times, the attacks return when consciousness does, therefore no good. Cafe noir will sometimes afford relief. In interval







examine into every case and try to find whether asthmatic attacks are brought on by atmospheric changes. In this case person should, if able, change his dwelling. Look out for reflex exciting causes, and especially examine nose for polypi. Again, if there be evidences of Anaemia give Iron, Arsenic and Cod Liver Oil, and by bringing up tone of general health may cure or at least ameliorate. Again, if obstinate or will not yield, look for family history for gout or rheumatism, and if so give proper treatment as such alkalis as salts of lithia, soda, etc. Again, if it is associated with Eczema and cutaneous affections, cure it. If Asthma is associated with Chronic B., while it may act as exciting cause, treat and try to cure by Kali Iodide 10 grs. t. i. d., which seems to act as a neurotic, and the Iron, Cod Liver Oil and Arsenic.

## PNEUMONIA.

Some would like to discard name and call it *Pneumonitis*, but as the name is so fixed this is not necessary. It means inflammation of the substance or parenchyma of lungs—i. e. the ultimate bronchi and vesicles and connective tissue, and occurs in three forms. (1) *Lobar, Croupous, or Exudative*, in which inflammation appears in vesicles ultimate bronchi, and to some extent the connective tissue. (2) *Lobular or Catarrhal* appears to start in the smaller bronchi and extend to the ultimate bronchi and vesicles. (3) *Fibrinous or Chronic Interstitial*, first makes appearance in fibrous tissue. Of these Lobar Pneumonia is most frequent and hence most important. Ultimate bronchi have no mucous glands, nor ciliated ephithelia, as here it is squamous and the blood supply of these vesicles come from the final ramification of Pulmonary vessel, while bronchial tubes get their blood supply from systemic circulatory system. And it is this tissue which is inflamed in Pneumonia. Differing not only in epithelial covering but also by mode of blood supply from parts affected in Bronchitis. Acute Lobar Pneumonia (Croupous

or Exudative) Inflammation affects primarily the substance of lung with fibrinous exudate in air-cell and is accompanied always by Diplo-coccus of Pneumonia, or of Fraenkle Inflammation, may involve part or whole of lobe or entire lung, or may involve both lungs and still called lobar, as it has no regard for lobules. Has been much debated whether it is a local disease, or constitutional with local expression. The latter is now chiefly believed, because, 1st, Inhalation of gases or irritants will not give rise to lobar pneumonia but may cause Lobular by first causing Bronchitis; 2nd, prevalence of cold and wet weather does not increase the occurrence of disease; 3rd, there seems to be no direct relation between the symptoms constitutional to the amount of lung tissue involved; 4th, when other lung or lobe is attacked it is held that there is no second chill, etc., but Chew says that this is not always the case; 5th, grave symptoms sometimes occur before the location in lung shows itself. *Chief points of resemblance between Pneumonia and Acute General disease* is, 1st, Initial chill; 2nd, occurrence of the crisis; 3rd, nervous symptoms as convulsion in young and coma in old. But absence of prodromic symptoms and regular period of incubation are against constitutional theory.

MORBID ANATOMY—Changes are of 3 kinds, corresponding with these three general stages. 1st, Congestion or Engorgement: 2nd, Red Hepatization or Consolidation; 3rd, Grey Hepatization, in which although lung is solid still there is some fatty degeneration and absorption. 4th state is Resolution. 1st stage—Part of lung involved does not collapse when chest is opened, but still contains some air, as can hear it and get crepitation, feels firmer than natural and crepitation is less on pressure, but still floats on water. Color is dark red and at times purplish. On section a frothy and bloody serum exudes from the pressure. Microscopic sections of Alveoli are still recognized, but walls are thicker as epithelial cells are thicker and blood vessels congest and thus cavities are lessened. In cavity can be seen desquamated epithelial, red and white blood cells, and also some pus







cells. Cavity not completely occupied as some air is still present. 2nd stage, The same substances are found in alveoli but in larger quantity and also contains fibrin which fills the entire vesicles. Has been disputed whether exudation came from pulmonary or bronchial vesicle, probably comes from both—lung has reddish, dark, mottled look, and sometimes indented by rib, and if whole lung is involved there is increase in size; therefore the ribs indent lungs and weight is increased a great deal, if whole lung from 22 ozs. to 4 lbs. Lung will not float in water as it contains no air and on section looks granular, because there is more or less elasticity of vessel-walls, and when walls are cut it squeezes some of the exudation matter out. Microscope reveals alveoli completely filled with fibrin, and in meshes are the white and red cells, pus cells and epithelial. Now if the disease is to terminate favorably this exudation is softened by fatty degeneration and gotten rid of chiefly by absorption, and to some extent by expectoration. Connective tissue is also affected to some extent by exudation. If part of lung is near surface the pleura is apt to be affected and has fibrin, and hence *Pleuro-Pneumonia*. 3rd stage, more mottled and has lost its florid look and the exudate undergoes fatty degeneration and hence gray color. This does not take place suddenly, but gradually changes from second stage. Lung tissue is friable and easily torn, no crepitation, dirty red, viscid fluid surges from surface, or may not in twenty-four hours. On section puriform matter flows from it.

TERMINATE—Ist, *Resolution* or recovery; 2nd, *Purulent Infiltration* and hard to tell how far this could go and still not produce death; 3rd, *Abscess* and it is a wonder that this does not take place more frequently than it really does—seems to be conservative action; may be small, or large, due to confluence of several; 4th, *Gangrene* probably never occurs unless there exists previously some constitutional debility or in old alcoholic subjects. 5th, *Chronic Pneumonia*, exceedingly rare and though possible is scarcely ever seen. If resolution takes place there is absorption of exudate and lung resumes

normal consistency. If purulent infiltration takes place find pus products in lung and if it will recover as it does when not great the lung tissue is not broken down, but if death does occur, Alveolar walls are softer and broken down. If abscess does occur it is fatal in the majority of cases, yet in rare instances terminate in recovery, even after all signs of abscess have been gotten. If gangrene occurs it is always fatal, if not from Septicæmia at first yet it will later from gradual exhaustion, and seldom occurs unless previous debility, or history of alcoholism. *Signs:* Fetid expectoration of shreds of lung tissue, and cavity in lungs. Chronic Pneumonia rarely occurs from Lobar Pneumonia. *Most frequent seat* is lower lobe of right; 2nd, lower lobe of left; 3rd, upper lobe of right; 4th, upper lobe of left, and lastly middle of right. Rarely occurs in two lobes simultaneously—i. e., *Bilateral Pneumonia*—estimated to occur in only five-fifteenths per cent. and danger is greater in double. Very rarely ends in stage of engorgement, yet Prof. Chew says it is not always the case, as he has himself witnessed it in a few cases. Important to remember this, as at times abort by proper treatment in this stage. Stages succeed each other by advancing more quickly in old, and at times second stage in 6 to 8 hours. Sex—in early life not any difference, but between 20 and 40 men more common, but after 40 tends to equalize, and after 60 equal. One attack predisposes another. Duration of stage of congestion is from one to three days. Red Hepatization and Gray Hepatization from 3 to 11 days when absorption occurs and Resolution from 2 days to 2 weeks. Lobar Pneumonia is five times ~~more~~ <sup>LESS</sup> frequent before 2 years of age than between 2 and 20 years. Lobular or catarrhal Pneumonia more common in children.

<sup>AT</sup>  
SYMPTOMOLOGY—In some cases, especially in old subjects, have premonitory symptoms, which are headache, pain in back and limbs, and anorexia, but usually begins suddenly by a pronounced chill occurring in about 75 per ct. of cases. Chill more severe and longer than in any other disease except in some cases of intermittent fever, which may last 2 or





color being intimately mixed and not any spots as in Haemoptysis. This color is eminently characteristic. Later the sputa may become purplish or prune-juice color which is a bad sign, indicating lowered vitality and depraved condition, and most likely to occur in alcoholic subjects or very old people. In resolution the sputa gradually gets greenish, less viscid and then returns to whitish-yellow color. When Pneumonia is confined to apex there may be no expectoration; also true in children. In old age expectoration may suddenly cease, which is a bad sign, as it indicates failure of muscular power to clear out the bronchial tubes. Under microscope sputa shows blood cells, blood pigment, fat globules, Epithelium and white corpuscles, and in advanced stages sometimes casts of smaller bronchial tubes may be seen: The Bacillus Pneumonia of Fraenkel is usually, and in fact always is present—it is a Diplococcus, Elliptical, or somewhat lanceolate, occurs in pairs and hence name, first discovered by Fraenkel. It is the cause of Pneumonia when resistant power is reduced by some other influence. In health its invasion may be resisted, as it is often found in sputum of healthy persons; found in lung after death by Pneumonia. The microbe is sometimes found in the pleura, and about the heart in Endocarditis; Pleuritis, Meningitis, etc., can be set up by it. Easily stained with analine dyes; when in sputa of healthy person does no harm as long as tissue vitality is capable of resisting it. Pneumonia is more apt to occur in vicissitudes of weather. If a glycerite of the extract of the Pneumonia be injected by degrees in a dog, it will produce an immunity to Pneumonia. The microbe first generating is a poison which causes the fever, etc., this is the *Pneumotoxine*. Later an *Anti-Pneumotoxine* is produced which neutralizes the first poison; neutralization takes place with great rapidity after it once begins. This would account for the sudden clearing up of the Pneumonic symptoms. Klempeur Bros. have injected into patients with Pneumonia the blood serum from one convalescing from that disease and caused lower fever, normal respiration, etc.







5th, The *temperature* rises suddenly after or during initial chill, rising to 104 degrees F. Temperature generally highest 3rd day. The sudden fall occurs from the 5th to the 9th day, and this is called the "*Crisis*." Sometimes instead of terminating by crisis it abates little by little and is called "*Lysis*" in contradistinction to "*Crisis*". *Lysis* shows debility and was generally the result when bleeding was in vogue. A high temperature for 10 or 12 days is a bad omen, shows that lung is passing into purulent infiltration. 6th, *Pulse* varies from 90 to 110. If cardiac failure is imminent the pulse is apt to be intermittent; watch for it—Cardiac stimulants are indicated. 7th, *Physiognomy* is characteristic; look of anxiety; a circumscribed dark red spot below the malar bone, generally occurring on both sides; Herpes on lips and about nostrils in about 50 per cent. of cases; generally occur about time of resolution and is looked upon as a good omen. 8th, *Cerebral Symptoms*. Delirium and convulsions are not common in adults and when do occur show that apex of lung is attacked. Coma and Stupor in old and convulsions in children may occur. Twitching of muscles, catching bed clothes, and insomnia is common in drunkards: apt to develop early and is called Typhoid Pneumonia. *Typhoid Pneumonia*. The pneumonia that accompanies Typhoid fever is a mere congestion of lung, not a true Pneumonia Exudation. The Typhoid fever is apt to so lower patient's vitality as to give rise to Pneumonia. Typhoid Pneumonia is not a specific disease. When Pneumonia occurs with Bright's Disease, Erysipelas, or any disease when adynamia is present, is called Typho-Pneumonia because Typhoid state is present. Temperature is of the Remittent type, but morning temperature is seldom 2 degrees less than evening. Often two exacerbations in afternoon and at midnight. 9th, *Urine Examination*: Urine should be examined. It generally is scanty, due to high temperature. When crisis comes there is sudden increase, when by *Lysis* there is a gradual increase to normal. Chlorides apt to be absent until crisis comes. On the other hand the expectoration will contain Chlorides until crisis comes.

To ascertain if Chlorides are present in urine, add a drop of  $\text{HNO}_3$  then  $\text{AgNO}_3$ . If Chlorides are present there will be a white precipitate of  $\text{AgCl}$ .

**PHYSICAL SIGNS**—Found in general that solid ingredients are increased, at times two-thirds more than normal, due to excessive waste caused by febrile process. *Inspection*: Movements on affected side to some extent are diminished and increased on unaffected side. Some signs generally in twenty-four hours, yet in deep-seated inflammation may be delayed at times 2 days because it spreads slowly—more apt to occur in old person. In double Pneumonia abdominal breathing is increased and there is little movement on either side of chest. *Palpation* gives slight increase of vocal fremitus. *Percussion* shows in the first stage some impairment in resonance, more marked in the end of first or in second stage. *Auscultation* gives us what is absolutely characteristic, the crepitant rales. At the very beginning there may be feebleness and dryness of the respiratory murmur. *Crepitant stage*. You may suspect it but not be sure, for this is transient, and as exudation takes place you hear the Crepitant rale at end of inspiration, and probably due to effusion of small amount of fibrin on vesical walls, which causes them to stick together and when torn apart cause it. Sounds like pressure on India rubber sponge near ear, or rubbing locks of hair, or throwing salt on fire—i. e., fine, crackling sound, not removed by coughing, heard for period of 12 to 24 hours. At times second stage comes on so rapidly that you don't hear the rales. In Pneumonia of children crepitant rales are absent, due probably to the weak inspiration in children, viz., shallow breathing not stretching the vesicles, but as the act of coughing or crying necessitates deep inspiration you may hear it at the moment. Vocal fremitus and vocal resonance are only slightly increased because lung is not solid as in second stage, and in this case sound is transmitted better by solid. *2nd stage*: When process has advanced so far that vesicles are entirely full. *Inspection* gives less movement on the affected and increased movement on the unaffected side,







while if Pneumonia is double there will be marked abdominal breathing. *Palpation*: Increased vocal fremitus, because lung is solid, and is a very important diagnostic sign between Pleurisy and Pneumonia. Beats of heart are transmitted through the chest wall if much lung is affected, hence marked pulsation may be felt more on left side, but also felt on right. *Percussion*—marked dullness and probably increased resonance over the unaffected portions of lung; but if percussion is over sternum and near spinal column at times get resonance due to air in trachea. There is a sense of resistance to finger on percussion. *Auscultation*—Tubal breathing (bronchial) similar to sound heard by blowing through a tube, due to the greater conducting power of condensed lung; (no more crepitant rales as air can't get in vesicles.) In Broncophony or bronchial voice the vibration of voice is very much plainer, but don't get the articulate sounds of speech as in Pectoriloquy in cavity. *3rd stage*. No fast line to be drawn between the two, so at the beginning of this stage the signs are the same but if they are to terminate in resolution there is some little increase in movement and some diminution of dullness. Tubal breathing disappears and you then get broncho-vesiculous breathing and then the Crepitatio Redux, or return crepitant rales, are coarser than the first crop, fever falls, rales are produced on inspiration and expiration. If purulent infiltration there is continually high fever and the sounds and signs of second stage continue with purulent expectoration, as the vesicles are still full.

**DIAGNOSIS**—Passive Pulmonary Congestion or Oedema is always secondary to obstructive cardiac or ~~R~~enal (Bright's) disease; (2) no early chill and no early rise of temperature, no pain; (3) sputa is bloody and watery, but not rusty, tenacious and viscid; (4) Bilateral; (5) dullness not so complete and is to a certain degree movable because fluid gravitates on change of position. *In Capillary Bronchitis* (1) not true crepitant but coarser sub-crepitant rales both on inspiration and expiration; (2) Temperature less than in true pneumonia; (3) Dullness not absolute; (4) Expectoration muco-purulent.

*Pleurisy* (1) Invading chill if at all occurs is not so severe; (2) cough is dry, hacking and short, and no sputa; (3) first stage of each the friction sound is superficial, yet at times simulates crepitant rale so can't distinguish the difference; friction rale sounds are more superficial and heard on inspiration and expiration; (4) but in the 2nd stage dullness is due to effusion; (5) absence or diminution of vocal fremitus; (6) absence of respiratory sounds. *Catarrhal Pneumonia* occurs more frequently in children, and (2) is invariably almost preceded by bronchitis; (3) dullness in patches; (4) Bilateral Disease; (5) slow march, *Meningitis*, because in children Pneumonia often begins with convulsions or stupor. If initial stage (1) Pneumonia symptoms, (2) Constipation, (3) headache, (4) cup-shaped abdomen. Pneumonia is more often mistaken for meningitis than latter is for former; (6) no physical signs in Meningitis, slow 50 to 60 at first and later very rapid pulse [this is of much importance]. *Typhoid Fever*, at times Pneumonia, especially in advanced stages has adynamia symptoms as brown dry tongue, muttering and subsultus tendinum resembling Typhoid; and again true Typhoid fever has Pneumonia as a complication. As a rule when this occurs there is passive congestion of lower back portion of lining; this is generally the case, yet at times we have true Exudation Pneumonia. The symptoms in these cases of Typhoid which precede the Pneumonia symptoms are [1] Fall of temperature which occurs at from 5th to 9th day. [2] Free perspiration, [3] Less frequency of pulse and Respiration and a return to normal ratio, [4] Return of Chlorides in urine, lessened viscosity of sputa are good signs, [5] Also lessening of percussion dullness, [6] Lessened intensity of tubal breathing, and [7] the Rale Redux are especially good signs.

PROGNOSIS—In Stockholm, 10 per cent. proved fatal; in Vienna, 24 per cent; Bellevue Hospital in 4 years 34 per cent. died. These statistics are of little value as nothing is taken into consideration as to whether Alcoholic, old age, or if received in later stages when no treatment could be of







any service. Large mortality in the hospitals but private practice more favorable, because probably treatment is better and care is taken at early period; we therefore for basis of treatment depend more on private statistics. In old age and infancy the mortality is very great. Between 10 and 45 years of age they tend to recover, but even at this age if case is alcoholic, prognosis is altogether different as it is more grave. After 60 years it tends to destroy life, and the disease is very frequent at old age; and it is estimated that nine-tenths of all after 70 to 75 die either with or from effects of Pneumonia. True Pneumonia complicating Exanthemata as Typhus, Measles, etc., also obstructive cardiac disease, renders prognosis more grave and is very serious. *Bad signs*: (1) Temperature of 105 to 106, continuing for two days is grave; (2) Pulse ranging for over 120 for two days bad sign (not as bad in children for they have normally a quicker pulse); (3) if reaches 150 becomes dicrotic and intermittent and death is almost sure; (4) Sudden suppression of expectoration bad omen, especially in old age, as it shows weakening of muscle power; (5) Cardiac weakness and high temperature is the most frequent cause of death.

**TREATMENT**—No one plan for all cases; but direct your treatment to the patient and not simply to the name of the disease, as treatment directed to old would be different to young, etc. At a certain period of life, and if no complication exists, the processes of disease will in themselves work out cure. Don't use measures to interfere with natural cause of disease, and especially no depleting measure should be used—e. g., bleeding, although it does some good at times, yet patients die of cardiac failure later. One eminent pathologist said that bleeding tends to cure the disease, but out of twelve cases his statistics show eleven deaths. If you see patient at beginning and chill is on at the time, or has just passed away, give v to vi M. of Magendies; it relieves dyspnoea, nervous anxiety, and pain especially, and does good directly against the Pneumonia process by acting on the vaso-motor system, preventing congestion. Have room



quiet and well ventilated. Envelop chest on both sides in jacket of cotton batting and oil silk, which acts as poultice and prevents evaporation and cold from chest. In general if pain is not very severe give the morphine by mouth. When second stage is reached no treatment will tend to evacuate the vesicles of their exudate. But when first stage is about to be established, while as a rule it will go on to second stage, yet not always, and it is possible to prevent by giving quinine and opium; and the earlier you are called to such a condition the better; give 15 grs. quinine and hypodermic of morphia; one-sixth gr. of morphia not only quiets patient and relieves pain but it also tends to lessen engorgement of capillaries, and quinine also acts in this way. Blood letting (leeches or venesection) in beginning often beneficial. It is also possible that quinine in this stage, where small number of diplococci are present, destroys them; even if you are a little late no harm can come from it. Tinct. of Aconite and Veratrum Viride with the idea that it lessens the force and frequency of pulse, but it does it by weakening the heart, and hence Dr. Chew does not like it. Alkalies are given and perhaps tend to liquefy fibrin and thus do good, 5 to 10 grs. of Citrate and Bicarbonate of Potash every 3 to 4 hours. Carbonate of Ammonia in Muc. Acaciae may also do good in V to X gr. doses, and not only does it act as alkali but stimulates the heart. Also may give Spirits of Mendererus. After *Second Stage* has set in, the thing to do is to uphold strength of patient's heart, and even in this stage Opium should be given guardedly, as may interfere with expectoration. Indications for treatment are high temperature and weak heart. High fever should be controlled. Some use the cold bath, but Dr. Chew does not use it as crowding blood in internal organs may increase congestion of lungs, but if this could be prohibited good effects by relieving high temperature will be had by applying cold bags to carotids for 10 to 15-minutes at a time; take off and return again. Some recommend anti-febrin, etc., but these drugs tend to sedate heart and do so in the following order: Anti-







pyrin, Acetanilid, Phenacetine. Hence last is better than any other, but best not to use any of them, but 3 to 5 grs. quinine every 3 to 4 hours with cold bag to neck is good. But the quickest way is by Hypodermic injection of the solution of hydrobromate of quinine 10 to 20 minims. If heart continues rapid and intermittent alcoholic stimulants should be used. Some require only a small amount, while others more. Especially weakness of heart is most apt to occur at resolution, and in this case death will often be stopped by use of alcohol. Some writers doubt the abortive statement which Dr. Chew mentioned. Keep patient perfectly quiet and in uniform temperature.

Patients often die after Pneumonia because heart is apt to fail after resolution. Dr. Chew opposes use of coal-tar series of anti-pyretics, but recommends quinine, ammonia, and alcohol. Nothing takes the place of alcohol when heart stimulants are needed. If pulse ranges to 125 then give dessert-spoonful of the stimulant; may if necessary increase to  $\frac{1}{2}$  oz. every fifteen minutes. Besides this digitalis, strophanthus, or strychnine, in some cases is beneficial; as a rule it is good in those cases in which heart is dilated, but at times we will find similar use of it in Pneumonia, and by its use blood is driven on through lung better. Special indications for its use are labored action of heart with undue frequency and diminished quantity of same. So give either Digitalis Tinct. m. xv, or infusion  $\frac{1}{2}$  teaspoonful every four hours, or Tinct. of Strophanthus 5 drops, or Strychnine one-sixtieth to one-thirtieth gr. every few hours until 3 or 4 doses. If great restlessness and insomnia occur, we can with prudence give something to produce sleep. Give one-sixteenth to one-eighth gr. morphine every 15 minutes until four such doses have been taken, and in this way may get refreshing sleep without narcotics, and if sleep is not produced give the same again in two hours. Chloral is good in some cases given cautiously, dose 10 to 15 grs., repeated in two hours. Dr. Chew never saw depression from it, especially when alcohol is given also. Again, Brown's Chlorodine (English) is a good anodyne and Hypnotic dose 10 to 15 drops, not

likely to depress. Sulfonal and trional also good. If at this time of resolution Expectoration is difficult give Ammonia-carb. 5 grs. every two hours. It not only aids expectoration but stimulates heart's action and as an alkali produces liquefaction of fibrin. Give as follows: Suspended in mucilage, or give in one part simple syrup and 3 parts water in a dessert-spoon, and if 5 grs. not enough give more. Seneka syrup, teaspoonful, good if it does not nauseate. If resolution and fall of temperature does not take place freely—i. e. if there is delayed resolution, apply fly-blister to the affected side—more particularly in those persons past 45 years—it need not to be large, 4x6 inches, well up in axillary region; take off when skin is good and red, and then put on flax-seed poultice, which produces blister but not so painful; repeat if necessary in region lower down. Tonics during convalescence—Iron, quinine, strychnia Elixir, teaspoonfuls one to two t. i. d. If lungs go into purulent infiltration still keep up heart and reduce temperature by quinine.

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## CHRONIC INTERSTITIAL PNEUMONIA.

In itself always chronic. It is true it has occasionally followed lobar, but yet it is a chronic inflammation of fibrous interstitial structure holding together areola tissue and supporting its blood vessels; cell elements become multiplied and alveoli are pressed upon and may be entirely obliterated and whole part be of fibrous tissue; may be in patches or may spread over whole lung. Tissue contracts later and reduces size of organ. No exudate in vesicles but consist of induration and contraction of interstitial tissues. Alveoli, smallest bronchioles, and blood vessels apt to be involved and obliterated. On section, creaks under knife and may have shiny, marbled appearance; not uncommonly find bronchi dilated, and hence Bronchiectasis is very common. Hence signs of cavity are never primary, although may follow croupous, but this is rare. Results at times from Chron-







ic Bronchitis, inflammation extending to connective tissue, so not very uncommonly in C. B. have patches of consolidation. At times by continuation of inflammation it follows pleurisy. *Pleuro-Interstitial-Pneumonia.* Alcoholic subjects (old) are found laboring under C. I. P. at times, but not so commonly as the same disease of kidney or liver, as at times not so great its presence in lung as it is quickly exhaled. Far from an uncommon mode of its production is the action of fine particles of solid matter by irritating the structure—e. g., stone-cutters, coal miners. It often follows gout or rheumatism. Interstitial pneumonia is often followed by Fibroid Phthisis, which is also often seen in coal miners, wool weavers, etc. Lung may be contracted to  $\frac{1}{4}$  its normal size but not well defined at first, as disease gradually forms. *Dyspnoea*, after it is once formed, is a prominent symptom and when the lung only is limited in the affection it is not constant, but may be caused by exertion, but when great only a little exertion is required. Again, if only one lung is affected may not have *Dyspnoea* if lay on affected side as sound lung moves freely, but if lay on sound side will have it. Cough always present and may have muco-purulent expectoration which denotes dilation. Temperature is not high, being only 100 to 101, higher in evening. *Pulse* increased in frequency. May have *night-sweats*. May in severe diseases have *Dropsy*, due to back pressure.

PHYSICAL SIGNS—<sup>LUNGS</sup> Inspection reveals retraction of chest wall because strings shrink, in well developed disease and by measure may be  $1\frac{1}{2}$  to 2 inches difference between good and bad side—unaffected side may be bulged because of vicarious action and may have Emphysema. *Palpation:* Vocal fremitus is increased and may be different in places due to the patches. *Percussion:* Marked dullness, which may also occur in patches; very marked, often called wooden-note; if Bronchiectasis you must distinguish from cavity as there is always some amount of tubal breathing, which may be in patches. *Auscultation:* If associated with Bronchitis may have mucous rales and Broncophony—if Bronchiectasis have

signs of it—*puerile breathing* (increased respiratory sound) heard on unaffected side. If cavity forms you may have *pectoriloquy*.

**DIAGNOSIS**—*Loobar Pneumonia* presents no difficulty, as this is an acute disease, comes on with chill and fever high; the auscultatory signs of first stage are that while tubal breathing is heard all over lungs it is not in patches. Retraction of chest wall is from *Pleurisy*. Hard to diagnose without some previous history—at times is a very difficult problem to solve—not so apt to be signs of tubercle in *Haemoptysis*, nor muco-purulent and fetid expectoration nor is there tubal breathing, but weakening or absence of respiratory signs in retracted chest; aspirator may find some lingering causes. Comparatively rare and when it does occur is secondary to cancer elsewhere, nearly always or probably more often mammary. Involves whole lung rapidly, no shrinkage on affected side but rather bulging; no febrile stage, and expectoration shows cancer cells. Never immediately fatal, but may lead to intercurrent diseases, especially to *Phthisis* variety, which is recognized by *Bacilli*; *Haemoptysis* may result. Again, extreme dilatation of heart, which may lead to congestion of liver and kidney, *Albuminuria* and general dropsy. More or less dyspnoea always present.

**TREATMENT**—Health never restored to normal. In early period correct the attendant bronchitis. If *Pleurisy* exists do not let fluid remain too long, but aspirate. Keep patient under tonics, especially *Basham's Mixture* and *Cod Liver Oil*—Arsenic is good—warm clothes, and if possible go to warm climate. Some say *Iodide of Potassa* is good to absorb, but not in this disease, but it may cure *Bronchitis* and do good in *hobnailed liver*, inflamed kidney, and hence do good in syphilitic patients: 5 to 10 grs. t. i. d; *Syrup of Iodide of Iron* is also good.

## ACUTE PLEURISY.

Acute inflammation of a part or whole of the pleural sur-







face on one or both sides of chest; may involve part or whole of one side or both simultaneously, but generally one is subsequent to the other.

**MORBID ANATOMY**—Being a serous membrane there is first a fibrous exudate and then effusion in cavity. This is characteristic of serous membranes. In first stage the membrane is redder than natural, but is not seen in uncomplicated cases, as never fatal in this stage. There is Hyperaemia and it loses its normal glistening appearance, it is dry and may be rough by capillary congestion and a little fibrinous film overspreads this, which later may be  $\frac{1}{4}$  inch thick, and little later serum exudes and gravitates down to the dependent part, and gradually increasing it compresses the lung, the relative amount varies in different stages and so the advance of the further changes. If membrane is comparatively thick resolution may take place, or if not adhesion takes place between the two pleural surfaces, lining may be permanently bound down and thus hinders play of the lung; this is thought by some, but Dr. Chew says it is doubtful whether or not it hinders movement, as adhesions stretch. Again, fluid after a time, if not absorbed, may become purulent and then constitutes an *empyema*. Sometimes adhesions prevent the fluid from gravitating below, and this constitutes *incised Pleurisy*. Often complicates Bright's disease, Phthisis, etc. Fluid is sero-albuminous. If person once has Pleurisy always signs of it can be seen after death.

**RESULTS**—If fluid is pus and not drawn off it will never be absorbed in adults, but may burst into lung and be expectorated. In case of retraction when lower part of lung is compressed there may be compensatory Emphysema in upper free part, or may burst into the abdomen through diaphragm; again may burst into the alimentary canal and be evacuated from the stomach by emesis and by anus. (Keep this in mind). Further results are binding down of lungs and retraction of chest, for serious effusion being absorbed and the lungs being bound down they do not expand in some cases. This occurs only in very severe cases. Re-

traction takes place in those cases where the fluid remains a long while, so as to produce some changes in the lung tissue, and the lung does not expand but air forces walls in.

<sup>AT</sup>  
SYMPTOMOLOGY—One of the earliest and most prominent is *pain* in the side of a <sup>inflammatory</sup> ~~lanceolating~~ kind, and referred chiefly to nipple, increased by deep inspiration, hence patient tries to lessen movements of affected side. The *fever* is not as high as in Pneumonia, average 102 to 103;  $\frac{1}{2}$  the cases may go to 104. *Pulse* increased from 90 to 120. It is tense and of wirey character, small; this is characteristic of serous inflammations. *Respiration* hurried and jerking in character. *Cough* is a common symptom, dry, short, hacking, due to efforts to restrain it. May be little pain and no fever, but may have the physical signs and the breathing is hurried; this is *Latent Pleurisy*, and most apt to occur in patients who are debilitated. Another state of things is to find the patient with rational symptoms of Pleurisy, and by the physical signs you get nothing, but don't say there is no pleurisy, because it may be the *Diaphragmatic pleurisy* and can't be detected until second stage, viz., effusion. Rise of temperature is often preceded by a chill which is not as severe as that of Pneumonia and is often scarcely noticeable.

PHYSICAL SIGNS—During first 24 hours nothing is gotten on percussion or palpation, but inspection gives some diminution of the movements on affected side, because the Pleura is acutely inflamed. *Auscultation*: On auscultation even in very early period get *friction murmur*; also get the respiratory murmur, enfeebled and jerky, because air is let out little by little to ease the pain. Friction when membrane is dry, and little later when the fibrin is there percussion will give some impairment of resonance, which is told only by careful comparison with the well lung. In some cases symptoms will lead to diagnosis of pleurisy without signs as in Diaphragmatic Pleurisy, in which cases don't get friction murmur but in 1 to 2 days effusion rises above floor and pain has disappeared. *Second stage*: Although breathing is easier, there is still little less movement but not as great as in first stage







—Percussion gives dullness from lower part first, and clearness above, and as effusion is increased get increased area of dullness. Palpation gives diminished or no vocal fremitus. Auscultation low down respiratory sounds may be entirely lost, little higher get feeble murmur, while still higher get great increased murmur due to vicarious action. On speaking if large amount of fluid no sound is transmitted, while if only small amount of fluid get Egophany or bleating sound due to passing of vibration through fluid. This sound is transitory, as when layer becomes thick it is not gotten. As absorption takes place dullness diminishes, friction sounds may return, and in this kind sound is moister in character than at first. Respiratory murmur returns. In some rare cases chest wall will be retracted by lung being bound by adhesion and then no respiratory sounds.

DIAGNOSIS—Pneumonia has a higher temperature, 104 to 105; Cough is freer, deeper and there is a characteristic expectoration; pain is dull, not lance<sup>W</sup>ating; face is flushed, while pale in pleurisy; Crepitant rales in 1st stage of pneumonia at end of inspiration while in Pleurisy have friction sound on both inspiration and expiration. Sometimes difficult to distinguish between the friction sound and crepitation, as the friction sound will escape attention on expiration, so be careful and if you are, you will generally be able to distinguish friction sound, which suggest superficiality and dryness, while crepitant rales suggest some moisture and depth. In 2nd stage have dullness in both, but get tubal breathing on one hand, while on the other get diminished or absence of respiratory sounds. On Palpation in Pleurisy you find fremitus lessened or broken up, while in Pneumonia the fremitus is increased. (In Pneumonia the chill is more marked. 1st, Temperature higher, 104 to 105; 2nd, Cough is freer with characteristic expectoration; 3rd, Pain is dull; 4th, Face is flushed; 5th, Crepitant rales at end of Inspiration; 6th, Increased fremitus; 7th, Increased respiratory sounds. In Pleurisy the temperature is 102 to 103; Cough is hacking, no expectoration; pain is sharp and lance<sup>N</sup>ating;

is pale at first. Friction sound on both inspirative and expirative, but and diminished fremitus diminished respiratory sounds. However pleurisy has been mistaken for Pleurisy, but there is no elevation of temperature, nor any of the physical signs, except may have jerky breathing, and in neuralgia have three points of tenderness. Inter-costal inflammation (Pleurisy) have slight rise of temperature, (3 painful points—1st, 2nd, 3rd, close against spinal column, and in axillary region due to branch springing off and 3rd at termination at side of sternum.) No physical signs.

Prognosis—In general very good in many cases. Will of itself terminate, but treatment alleviates considerably and will prevent results at times which would occur—a. g., when there is large effusion, very thick adhesion would prevent movements of lung, and again, at times when inflammation is very great will possibly pass into lung and give rise to interstitial inflammation. Again, if absorption does not take place as rapidly as it should the effusion may become purulent in character and the patient may die of Hæmic fever and exhaustion, and if not evacuated by operation it will terminate itself and these results are very dangerous and should be prevented. (May break into abdominal cavity and cause peritonitis, or into alimentary canal, or into lungs and bronchi.)

Treatment—When case is very acute must relieve pain, and not only will Opium relieve pain but it also tends to lessen the intensity of the inflammation, so give  $\text{v ss}$  M. of Magendie's solution hypodermically, which probably causes congestion of capillaries and also tends to lessen exudation of white cells. Quinine is a valuable adjunct, so give  $\text{ss}$  to  $\text{ij}$  grs. at once with the Opium. Suppose the fever very high,  $104^{\circ}$ , and pulse firm and throbbing, application of a few leeches at point of severest pain mitigates intensity of inflammation, as well as aids in relieving pain. General blood-letting was formerly in vogue, but not used now as it is deleterious. It is true it will relieve congestion







and to a certain extent pain, but the harm results in the second stage by giving rise to Hydraemic state of blood which increases the tendency to larger serous effusion, and this overbalances good in first stage. Leeches don't act in this way, but still they should not be used except in cases noted above. Keep patient in bed and envelop the chest with batting, and after first stage give tonics of iron, quinine, and strychnine, nourishing food as eggs, milk, beef, &c. If fluid effusion does not become absorbed with normal rapidity but increases instead, a blister 8x10 first in axillary region, avoiding posterior part, will produce an increased absorption in 2 to 3 days, and if not re-apply another on front part of chest. Let plaster stay on for a few hours, and when the surface is red remove and apply flaxseed poultice, which will form a blister without so much discomfort. Now when blister forms snip and let out water. Effect of blister will be augmented by giving Iron—best preparations are Tinct. of Chloride of Iron—the latter is said to be better in tuberculous persons: Dr. Chew gives it in xxx M. doses t. i. d. Again, Hydragogue cathartics are recommended by some, but although good in hydrothorax it is not of any utility in Pleurisy. So never attempt to get rid of fluid in this way as they weaken patient very much—better use diuretics. If notwithstanding the use of the above method, then comes up the question of mechanical interference, which no doubt is used too often, but consider indications of its use. Mere mechanical pressure on blood vessels by large effusion will interfere with nature's method of getting rid of fluid by absorption. Hence removal of part and not all of the fluid will aid nature in getting rid of fluid. Again, if great quantity of lymph-exudate it interferes with absorption. Now if fluid tends to become purulent—Rules: If fluid occupies half of one side of chest and remains stationary for four weeks, it shows that there is some fault in absorbing process, and you had better withdraw it. If half of both sides for 10 days or two weeks, aspirate one side, and it is often advisable to aspirate both; or if one side is

choked full and there is dyspnoea aspirate. The application is simple—most convenient to have affected side up, if person is lying down; or better, if able to sit in chair, draw arm well over chest to render tense the muscles; the best point is in 5th or 6th intercostal space near axillary line, between it and edge of scapula; before inserting make sure that you have perfect dullness on percussion and that respiratory sounds are lost. A good point is not to render vacuum of entire barrel of instrument (as by sudden flow of fluid may produce shock) and then gradually raise the piston. When you draw a variable amount of fluid, and patient begins to cough violently with sense of constriction in chest, stop. The withdrawal and usually the process of absorption will go on, but at times may remove all of it without any bad signs, especially if recent. If fluid is pus aspirator is only diagnostic, but have to open chest—this is simple. Make an incision longitudinal between the ribs down to the pleura, let out pus, wash with antiseptic solution, insert drainage tube and let alone. In young subjects aspiration will answer in great many cases, so always try; reason not known, but thought by some to be due not to specific organisms as in adult. Dr. Chew aspirated 3 times in one child, but finally resorted to incision. Lower down incision can be made the better it will be as regards drainage.

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## PHTHISIS.

The term Phthisis includes several affections, but all tend to produce degeneration and destruction of lung tissue and deposition of tubercle in the lung. In some cases the advance of the disease is very rapid, and it is then *Acute* or *P. Florida*. Most cases come on gradually and are chronic forms. Chronic Phthisis occurs in three forms, not always sharply distinguished from one another. 1st, *Catarrhal Phthisis*, (caseous or cheesy) often beginning as a bronchial Catarrh, going on to Catarrhal Localized Pneumonia, forming a favorable nidus for the tubercle bacilli. Here the







tubercle is not primary, the catarrh being primary. 2nd, *Chronic Tubercular Phthisis* when the tubercle is primary. 3rd, *Fibroid Phthisis*, cases where fibroid or interstitial Pneumonia has been followed by Phthisis. Chronic Phthisis is also called *ulcerative Phthisis*, but Dr. Chew says the term is bad as ulceration is more extensive in acute form. The essential <sup>cause</sup> ~~change~~ in Phthisis is the presence of the *Bacillus Tuberculosis*.

**Phthisis Florida, or Acute Phthisis** is much less frequent than any other variety. The lung is the seat of inflammation, advancing rapidly with deposit of tubercle. It is to be distinguished from the systemic disease, acute miliary tuberculosis, where lesions are in all parts of the body. Acute Phthisis usually occurs in young people.

**SYMPTOMS**—Rapid emaciation, continual hacking cough, sudden rise of temperature, fever 103 to 104 in the evening, pain in side, pulse rapid, chills apt to occur 3 to 4 times a day, profuse sweating. Symptoms similar to Pyaemia; cough increases and worse at night, soon accompanied by purulent infiltration, expectoration is full of bacilli, marked anaemia. Fever of hectic type 99 to 100 in morning. Chill, fever and sweating often cause it to be confounded with malarial fever. Respiration is hurried, sleep is interfered with, there is failure of strength, diarrhoea, haemoptysis often occurs, and in fact is more apt in this form than any other, as ulcerations occur so rapidly that blood vessels have no chance to close up. Generally fatal in a few weeks to few months. Dr. Chew saw a case which ended fatally in 20 days after patient was first attacked. Face assumes a pearly palor, hectic flush is also present, and eyes are bright and glistening. Seldom is Haemoptysis absent through whole course and may mark the advent. Acute Phthisis usually runs a steady progressive course to death, and yet there may be at times a brief intermittance only to be followed by more rapid progress. The general symptoms may be confounded with those of Pneumonia.

**PHYSICAL SIGNS**—*Inspection* shows increased respiration,

and decided diminution of capacity of chest. *Palpation* gives increased vocal fremitus, because lung is condensed—generally most appreciated in sub-clavicular region. On *Percussion* there is marked dullness. At an advanced period if cavity forms there may be resonance, and the characteristic “cracked jar” resonance. This is present only when walls of cavity are thin; if walls are thick there will be dullness. As a rule the sound you get on percussion over cavities is dull on account of thickness and condensation of walls. *Auscultation*: At very beginning of disease fine mucous rales are heard over affected region, and especially in sub-clavicular region. There is prolonged expiration because air vesicles are losing their elasticity. Bronchial breathing and Bronchophony are detected when dullness appears. Cavities form rapidly and when they appear get cavernous, or Amphoric breathing and later Pectoriloquy, in which you hear the articulate sounds from the chest. In exceptional cases the cavity may be a large bronchial dilation, but this is very seldom; so Pectoriloquy can be regarded as characteristic of a lung cavity. Amphoric breathing is that kind which can be simulated by blowing in a demijohn. Metallic tinkling indicates a large cavity containing a certain amount of fluid, but this can also be produced by a perforation into lung setting up Pleurisy. The tinkling is caused by fluid and air. Physical signs vary with seat and extent of disease, also with the progress of disease, whether rapid or slow. Fluid alone will not give the tinkling, so it is not heard in uncomplicated Pleurisy. This sound is pathognomonic of cavity. The crucial test consists in microscopic examinations of the sputum. Limitation of rales to upper part of one lung is always a bad sign. After death solidification will be found in affected parts, presenting appearance somewhat of Exudation Pneumonia. Nodules of tuberculous matter are seen. These press on the blood vessels closing them up, and so cause the cavity (vomica) by degeneration; cavities are often seen. A hereditary tendency often exists in most cases, more so than in the chronic form. Direct cause is *Bacillus Tuberculosis*.







DIAGNOSIS—Likely to be confounded with *Pneumonia*; the rapidity of changes and sudden rise of temperature are like *Pneumonia*, but the initiatory chill is not apt to be so pronounced as in *pneumonia*, nor is temperature apt to rise so suddenly to such a height. Signs of *Pneumonia* are first in lower lobe; *Phthisis* in upper lobe near apex. In *Pneumonia* first stage get the crepitant rales; in *Phthisis* get the fine and large mucous rales. In *Pneumonia* have rusty sputa; not in *Phthisis* unless the two exist together, as they often do. But after cavity forms all doubt is expelled by sounds gotten. *Acute capillary Bronchitis* from beginning is double, and temperature at first not so apt to attain the high temperature of *Phthisis*. Emaciation is very rapid in *Acute Phthisis*; not so in *Capillary Bronchitis*. In *Intermittent fever* the chills are more regular, respond to quinine, and have no auscultatory signs. *Acute Phthisis* is very bad; very few cases ever recover; fatal in from few weeks to few months. Death is from exhaustion of *Apnoea*. Average 3 to 4 months. Change of climate is out of question. Quinine and Phenacetine may be used to control temperature, and if sweating is caused combine the two with *Atropia*—e. g.,  $\mathcal{R}$  Quinine grs. ii, Phenacetine grs. iij, *Atropine* gr. ~~100~~; Ft. Pill No. 1; Allay cough by *Morphia*, or Syrup of Wild Cherry, 1 dr. and Hydrocyanic Acid gtt. j at a dose, or Spirits of Chloroform, gtts. xv. Make patient comfortable; if heart is weak give *Digitalis*. Compound syrup of Hypo-Phosphites is good to promote appetite and is a tonic—cod liver oil not well—Milk and eggs good. If patient's sleep is disturbed use small dose of *Morphia* every other night, not every night.

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## CHRONIC PHTHISIS.

Is either catarrhal, tubercular, or fibroid. There is always a tubercular element existing underlying every form. In the Catarrhal or caseous form the smaller bronchi and air vesicles of the affected part become filled.

MORBID ANATOMY—With exudative products, mucous and exfoliated epithelium. They may become fetid and purulent. It is in them the tubercle commences. The expectorated matter is caseous or cheesy in character. In the lung the exudation becomes matted together—i. e., consolidated and generally involving considerable area of lung. When the area is not too great resolution may occur with formation of cicatricial tissue, or cretaceous matter (lime salts) which takes place of nodules. This is called chalky or cretaceous degeneration. The caseous matter may press upon the surrounding blood vessels and bronchi, ulcerate and break down from lack of blood supply and result in formation of cavity; the cheesy matter and rest of lung tissue being expectorated and perhaps absorbed. There is no uniform cause of advance of this disease. The local rales may be heard and no bacilli found. Again the local signs may be held in abeyance and the bacilli be found. Cretaceous nodules are often found in the lungs showing site of previous tuberculous nodules which have ceased to advance in their inflammatory process and chalky material is deposited. The most frequent process however is for the nodules to degenerate and a cheesy matter from which, being cast off, leaves a cavity. When a cavity ceases to advance it becomes lined with cicatrised tissue, undergoes contraction and perhaps becomes filled with earthy salts, or may linger until death is caused by some other cause. Blood vessels in affected area become obliterated and these remain as fibrous cords, found on post-mortem examination. *The Bronchial glands* become enlarged, soften, and sometimes are converted into cheesy mass, being invaded by the bacilli. The right side of heart is apt to become enlarged. At first there is hypertrophy, which gives way to dilation. It is a very constant accompaniment of advanced phthisis of any form. The whole is due to invasion of the tubercle bacilli in lung already weakened by bronchitis or pneumonia. In the tubercular forms there is no primary inflammation apparent—the invasion of the bacilli being the primary cause.







The bacilli become aggregated in the adenoid tissue around the blood vessels of the lungs and set up tubercular deposits there. This was discovered by Koch. True tubercle always due to the activity of the *Bacillus Tuberculosis*. The bacillus is most favorably developed in the adenoid tissue around bronchi and vessels of lung, brain and intestines. The nodules of tuberculosis consist of cells which have multiplied and enlarged by pressure of bacillus; some larger are called giant cells in the centre of tubercle and others are around them and in centre are found the bacilli. The tubercle may either undergo (1) Caseation and softening with cavity formation, or less commonly (2) Fibroid hardening, or (3) Calcareous degeneration (calcification). There is probably always a hereditary tendency handed down from parents to child consisting of some weakness of tissue, so that it is unable to stand the invasion of the bacilli. The microbe itself is not handed down from parent to child—it is in the air, and being inhaled it sets up the characteristic disturbance. Dr. Chew says that a tendency to recurring attacks of Catarrhal Bronchitis predisposes, as the inflammatory products offer a nidus for the bacilli, and the bronchial tubes are in weakened condition. Fibroid Phthisis is nothing more than interstitial pneumonia, with the addition of the tubercular bacilli activity. In this the chief early change is in the connective tissue of the lining. It is thickened and hyperplastic. Large parts of the lung may be converted into dense tissue, due to contraction of the cicatrizing of the interstitial substance. If steady contraction of lung tissue it causes more or less atrophy of the lung with retraction of chest, most notably seen in the infra-clavicular region. The firm tissue becomes studded with tubercular deposits. This is the beginning of tuberculosis. There may be vicarious dilation of the lung in other parts. In advanced Fibroid Phthisis there is often seen enlargement of right side of heart, causing venous stasis, hepatic congestion, etc. Catarrhal or Caseous form begins with cough and muco-purulent expectoration, loss of weight and night-sweats. Local-



ized bronchitis shows itself more advanced in one side than in the other. Bronchial Dilatation is often seen by stretching of the bronchi.

**SYMPTOMOLOGY**—A limited pneumonia may be set up which does not advance to resolution. In this form there may be an arrest of process by treatment. Chronic Tubercular forms show less localized signs at beginning. The patients undergo great emaciation and haemoptysis disproportionate to amount of disease discoverable. The emaciation often becomes marked before there are any physical signs. Dyspnoea is a prominent and early symptom. Hectic fever is higher than in other diseases at early stages. Chronic Fibroid forms come on very insidiously, it being often impossible to distinguish it from fibroid pneumonia; search may fail to find bacilli. The first symptoms are cough and dyspnoea. There is failing of health nearly always; a sense of constriction or pain not amounting to acute. After a time patient loses flesh, the lung begins to contract, which is first seen above the clavicle; expectoration occurs. Fibroid form is most infrequent in early life but is essentially a disease of middle life. Among *symptoms common to all* are cough, the most common symptom, with more or less expectoration of mucous, glassy in character, containing bacilli, which are rod-shaped and colored by fuchsin and rosealine. As cavities form mucous becomes more and more purulent until it seems to consist wholly of pus. Haemoptysis is frequent, liable to occur in tubercular forms before there are any auscultatory signs. The amount of blood may vary from a mere streak to a pint. The blood-streaked mucous is wholly different from the rusty sputa of pneumonia. Hemorrhage in early form most apt to be bronchial and not apt to be dangerous. In later forms the blood may come from a vessel in cavity, and hemorrhage may become dangerous; it is very seldom the direct cause of death. The occurrence of haemoptysis of any account should create suspicion of tuberculosis and should lead to careful subsequent examination. Other causes may be at work, thus it may be vicarious, but







not usually. Certain valvular diseases of the heart may give rise to it, most noted is mitral stenosis. *Louis' law*, that every haemoptysis over a tablespoonful, if vicarious hemorrhage and valvular cardiac disease can be excluded, means tuberculosis; but the law is somewhat exaggerated, but as a general rule will hold good. Fever is certain to be found sooner or later in Phthisis. The lower point is apt to be in forenoon, the highest point late in the evening. Fibroid form most apt to be free from fever. Hectic Fever is the name given to it, and after the degenerations begin is highest in the evening. It is attended with chills throughout the day, which is followed by fever and more or less profuse perspiration. A constant high temperature (103 to 104) means rapid advance of disease. Hence low fever is good sign correspondingly. *Respiration*: Respiration is interfered with according to amount of lung involved and to a degree of fever—i. e., accelerated pain is not a prominent symptom, but may be altogether absent. It may however be acute; this occurs when pleura is involved—i. e., Localized Pleurisy. Often there occurs an accompanying intercostal neuralgia, as person with lowest vitality is prone to neuralgia. The acute pain referred to the mammary region may cause suspicion of intercurrent pleurisy. In chronic fibroid form pain is not altogether acute, but is oppressive and not common. Pain attending swallowing is of evil augury, as points to tubercular involvement of epiglottis. This pain may be removed by 2 to 4 per cent. Cocaine solution sprayed before meals. Is one of the worst possible complications. *Emaciation*: Emaciation occurs earliest and in most marked degree in the tubercular form. *Gastric Disturbance*: Disturbances of the digestive system as anorexia is a very frequent and marked symptom of advanced phthisis. *Incurvation of the finger-nails, also toe-nails*, is often seen in advanced form, especially of tubercular form, and is a sign of mal-nutrition. Coughing may reflexly produce vomiting. *Diarrhoea* is often severe and exhausting, and at times is probably due to tubercular involvement of the intestine. *Oedema*: Oedema of feet and ankles occur when



disease is far advanced. It is justly considered a sign that end is not far off, as shows heart is failing, and there is albuminuria.

**PHYSICAL SIGNS**—Physical signs best studied as occurring in different stages. 1st, Stage of Consolidation; 2nd, Softening; 3rd, Excavation. In the first stage of Consolidation signs vary as to degree and are found first and chiefly at top of lung, but if in both, one lung is usually more advanced. *Inspection*: Some diminution of expansion, not always noted, as at times is very slight. Again, very slight retraction of chest wall in Fibroid Phthisis may be marked, due to retraction or shrinking of lung. *Palpation*: Generally some increase in vocal fremitus, because of measurable solidification; but in health there may be a slight increase on right side, due to development of pectoral muscle in right-handed person, but in left-handed person more on left side; the same is even more marked of vocal resonance; hence it is important to let whatever opinion be modified by other signs received; but if in right-handed person increased on left side is of great significance. *Percussion* gives loss of resonance, which varies with amount of consolidation, first noted above scapula and in sub-clavicular region. This of course varies in degree and extent as the deposit increases and thickens. *Auscultation*: In early stages get slight feebleness of respiratory murmur with slight prolongation of expiration, due probably to the pressure on vesicles. As disease is more advanced it becomes more marked and you may get rude or Broncho-Vesicular breathing, due to pressure on the tubes, prolonged expiration due to loss of elasticity of vesicles; this expiration is high-pitched, while in emphysema is of low pitch, as the more solid the lung the higher the pitch. Often have jerky inspiration, due to impediment of entrance. Again, sub-crepitant rales (slight) due to localized bronchitis, and these often occur before consolidation. Vocal resonance is increased in proportion to increased dullness. Air spaces are more completely filled.

*Inspection*: Increased frequency of breathing, depression more







marked above and below clavicle, and the clavicle stands out in bold relief. *Percussion*. Advanced dullness and more extension. *Palpation* increased vocal fremitus. *Auscultation* gives mucous rales, gurgling in character, not removed by coughing. Marked bronchial breathing and broncophony.

STAGE OF EXCAVATION. *Inspection*—Less expansive power, more depression and more rapid breathing. *Palpation*—Vocal fremitus greater because, although cavity is formed its thick walls vibrate. *Percussion* dullness even if cavity is present, as a rule as they are at first deep and surrounded by dense walls; but if cavity increases and advances towards surface of chest and the matter is expectorated, you often get amphoric resonance; cavity must be large and superficial. It is in this same condition that we get cracked-pot sound. Cavity must be large with lax wall and connected with bronchi; it is pathognomonic. Chest wall must be comparatively thin. *Auscultation*: Cavernous respiration often spoken of as amphoric; sounds like blowing in demijohn. If a great deal of fluid you get gurgles when patient coughs. Amphoric respiration is increased in degree; it is characteristic of cavity, yet at times may get from large bronchiectasis. When patient speaks we have pectoriloquy, which is absolutely pathognomonic, thus differs from broncophony, as the articulate sounds are heard as though vibration comes from chest; Broncophony is simply increase of voice in bronchial tubes. Pectoriloquy may be gotten early. Metallic tinkling when fluids and air are present.

DIAGNOSIS—*Bronchitis*, chronic, temperature is slight, (seldom above 101 to 101½,) rales diffuse, bi-lateral. In *Chronic Purulent Pleurisy* there is high hectic fever, especially in *Empyæmia*, wasting cough, dullness below lessens as go up and changes with change of position; Aspiration sine qui, seldom bi-lateral, no Auscultatory signs. In *Pleurisy* rubbing and superficial sounds, dry cough, absence of rusty sputa, fever not so high (seldom exceeds 103), no vocal resonance in talking, egophony where effusions are slight. In *Phthisis*, temperature is higher, and higher in evening and

persistent, rales localized; at beginning of Phthisis high fever, hectic, wasting cough, dullness from above and fixed, Tubercle Bacilli in sputum. *Cancer*—Comparatively rare and usually secondary; bulging of chest; no elevation of temperature as a rule; currant-jelly expectoration, more or less pain, lymph-glands of axilla and neck are enlarged, cancer cells in sputum. (*Phthisis* is frequent, retraction of chest, high fever, Bacilli in sputum.)

PROGNOSIS—Can say Phthisis is better treated than it was previously, as it is better understood and also remedies at hand which can stay the progress. In early period it can be stopped—even in advanced can stay. Duration depends upon powers of resistance and form of the disease. Some say the younger the subject the more rapid the course; some truth in this; but altogether catarrhal form occurs most in young subject, but when it does occur in old person apt to run a rapid course. If person who has a hereditary tendency has reached forty years he is far less likely to develop the disease than younger, although as a rule, yet not always. Unfavorable circumstances, strong hereditary predisposition; if both parents had the disease person is more likely to take the disease than if one parent had it. Some think that Haemoptysis causes rapid advance, but Chew says that this is not the case. Seldom the immediate cause of death. Oedema of feet is a very bad sign, as indicates failure of heart and points to near fatal termination. Prognosis is bad. 1st, strong hereditary tendency; 2nd, when disease develops in early life; 3rd, When scrofulous or glandular disease has existed in childhood; 4th, Patient is narrow-chested, more if 5 feet 10 inches in height, on expansion have 38 inch chest measure—i. e., ought to have 3 inches expansion; 5th, When ordinary pulse rate is high; 6th, When there is great variation in weight without any apparent cause.

TREATMENT—1st, Preventive; 2nd, Medicinal; 3rd, Hygienic; 4th, Climatic. *Preventive* should be directed to those who, from our knowledge of family history, show that there is hereditary tendency. Begin as early as possible—never







allow infant to nurse from Phthisical mother for child's as well as mother's sake, as it is a draw upon mother's system. For children at older period of life regular exercise in open air, not only in the preventive treatment but in all treatment, while this is to be insisted on do all to prevent development of bronchitis, as this often furnishes nidus for development of tubercle. Indications are promoting nutrition and preventing catarrhal complication which those from Phthisical parents are so prone to have. Patients should be in open air in spite of cough, fever, and debility; but should not be exposed in very damp or extremely cold weather.

*Medicinal:* Very important indication for treatment is fever, which is an early symptom and later is a serious symptom, (catarrhal form most apt to have high temperature), rapid wasting and advance of local disease in direct proportion to height of fever. Quinine one of the best remedies, but in doses large enough to do good will irritate the stomach, but at any rate try it; give from v to x grs. Acts best if it does not disturb stomach or nervous system; often keeps patient awake, hence don't give late in the evening. If you can't give it resort to one of the coal-tar series, not Antipyrine, but Acetanilid, as causes less sedation to heart, and still less does Phenacetine; give iii to v grs. and repeat in 3 to 4 hours if necessary. If they tend to produce diaphoresis in excess give  $\frac{1}{4}$  gr. Ext. Belladonna, or ~~1~~ 100 gr. Atropia in combination with the above. If, however, in spite of this combination you must give it up if the sweating is still increased, but still must reduce, and for this sponge neck, extremities, etc., with cold water. Don't subject whole body at once. Even hectic fever accompanied by cavities may be controlled by one of the above agents, and again local application of Guaiacol, which has been employed for a few years; it is easily absorbed, 15 gtts. at first; apply with camel's hair brush, on chest, size of palm of hand. Acts slower but longer than cold bath. Easily absorbed and may be a germicide, but as yet a positive conclusion has not been reached. If you find 15 gtts. do not pro-

duce effect in 3 hours increase to 30 gtts., but best not to go above it unless you know by experience that it produces no harm. Of all remedies employed Cod Liver Oil is used most extensively; first used by Hughes Bennett, of Edinburgh about fifty years ago. Not a specific, as was claimed, but invariably does good; it is of service in some other way than in mere nutrition, as when it agrees with patient the weight of the patient increases out of proportion to the amount of nutrition supplied by the oil. It seems to promote nutrition. Increase in weight indicates slowing of local disease in lung, but if instead of emaciation being checked it increases, we can say that local disease is on the increase. Unless patient gains in weight from its use best to stop as it does no good, hence necessity of weighing patient occasionally. Give it after meals. If you find that it disturbs digestion, it may be better borne by telling patient to lie down for one hour after taking. Again, if can't stand pure oil try it in emulsion. If in spite of all these precautions it still disagrees stop it, and especially if it causes diarrhoea, which can be seen by looking at stools. Capsules of Morrhuol are good when can't give otherwise, although dose is rather small, yet better in small doses than not at all. Again, these capsules are also made with one gtt. Creosote; and often times Cod Liver Oil is better retained by giving one gtt. to dose, probably acts as anti-emetic. Question of Alcohol is a very important one, as in many cases when it has been advised as preventive or curative has resulted in making patient a drunkard, so don't give indiscriminately, but in ordinary dose of 1 to 2 dessert-spoonfuls before meals to patients whose will power can be trusted.

SPECIAL SYMPTOMS—*Cough* is one of the most common and earliest for which patient seeks advice. Most of cough medicines do harm, as they contain opium which disturbs digestion and produces constipation. But good is the use of HCN, and one of the bromides, viz., Syrup of Wild Cherry zii, Bromide Sodii grs. x, HCN dilute gtt. i, at dose. This can be repeated every 2 to 4 hours. There is no danger of







cumulative action of HCN. Its employment dates far back and was at a time thought a specific but it is not, but is a direct sedative to pneumogastric nerve, and it prevents to some extent the undue action of heart, and prevents nausea and cough to some extent. Chloral and Bromides often good, say taken every third night. Another remedy which may be added to the above is the Spirits of Chloroform in ~~in~~ gtts. 12 to 15. Sulfonal or Trional in 20 gr. doses is often good if no pain. At later period if the above remedies don't control can use some products of Opium and the best for this is Codeia; begin with one-third gr. and gradually increase. Again, inhalation often does good; take Comp. Tinc. Benzoin oz. i, Tinct. Hyocyamus oz. i, mix, teaspoonful added to very hot water and put funnel over vessel and inhale; they soothe the irritation and thus prevent cough. Conjoined employment of Creosote, and Spirits of Chloroform, and Alcohol equal parts. Of this place 20 gtts. in funnel on sponge and let patient inhale. *Night sweats* must be controlled. Pill of Strychnine ~~1/40~~ gr., Vallet's mass grs. ij, Quinine grs. ij. One agent is Belladonna, which is best, gr.  $\frac{1}{4}$  Ext. at 8 o'clock and repeat at 10 o'clock if necessary. A favorite formula of Thomason is Oxide of Zinc grs. ii to iv, Ext. Belladonna gr.  $\frac{1}{4}$ , make into pill. This combination does good when one alone will not. Atropia ~~1/100~~ gr. is very potent, hence should not be used too often, yet should when extract will not accomplish result. (Objection to its use is dryness of throat.) For *Diarrhoea*, Bismuth Subnitrate in 20 to 25 gr. doses is one of the best agents; will be borne by stomach and acts as poultice. Subgallate of Bi, v to x grs. is good, because it is antiseptic as well as astringent; also, Salicylate of Bi, v to x gr. doses. Creta Mistura also good. Fowler's solution gtts. 3 to 5 doses may do good, and when you have to stop this may use Arseniate of Iron gr. ~~1/12~~ to ~~1/6~~.  $\mathcal{R}$  Mist. Creta oz. iij, Tinct. Kino oz j, mix and give a tablespoonful three times a day. HCl and Pepsin is often beneficial. Always select proper food and if vomit from solid food put on milk for a

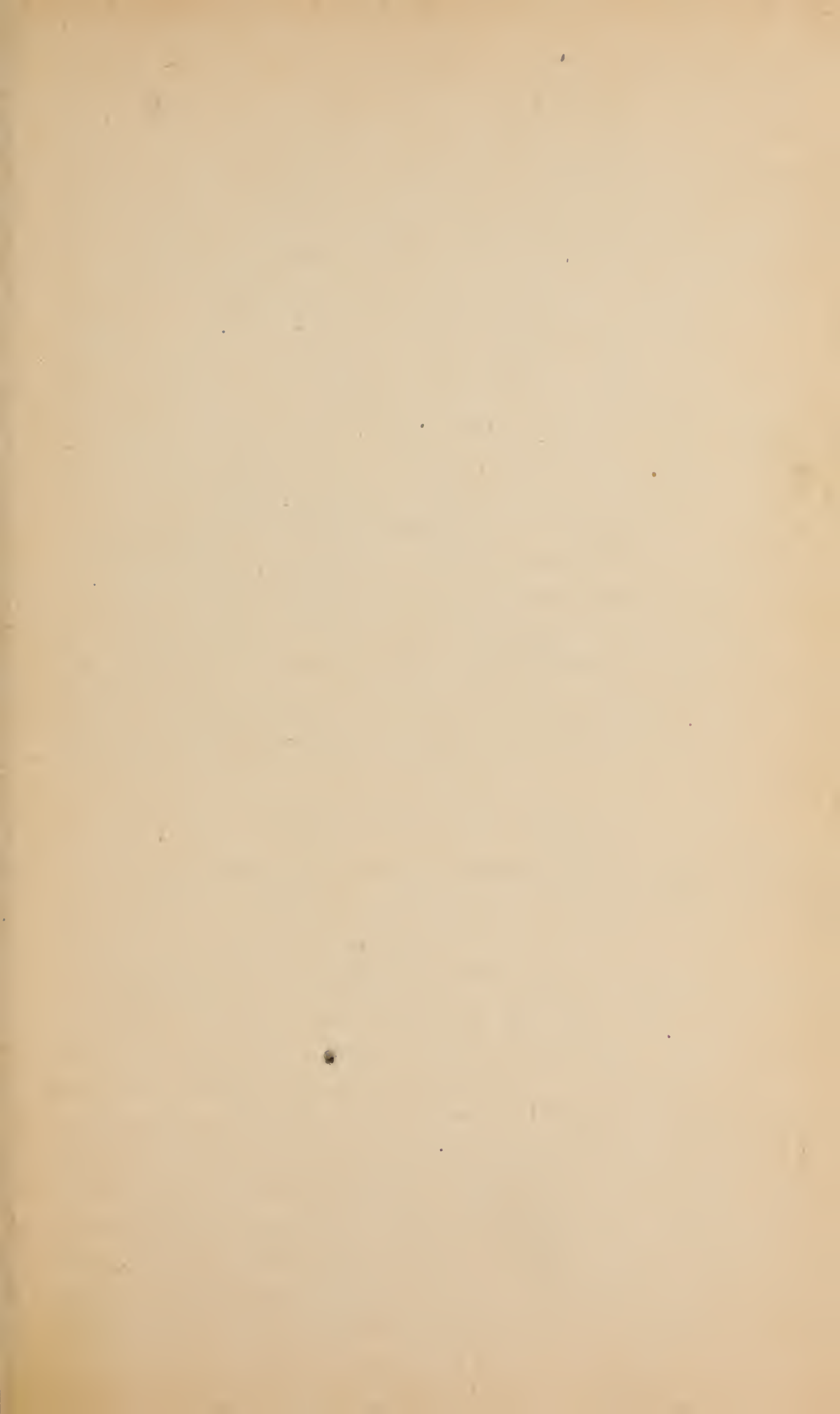
few days. Half teacup of hot water 10 to 15 minutes before ingestion of food. Among medicinal agents used HCN and Creosote best. Haemoptysis seldom produces death; yet at times it does, but we have this satisfaction that nothing would cure. The treatment is rest and assure patient there is no danger. Morphia hypodermically for nervous irritability. Cold to chest and hypodermic injection of Ergot, which acts on vaso-motor system. Ice over thorax. Suppurating cavities often give a great deal of trouble and yet can't reach this. Inhalation of Creosote and Benzoin may be good; also, Benzoin and Fl. Ext. Hyoscyamus; also, Fl. Ext. Eucalyptus; but has been recommended direct injection into cavity of 3 per ct. solution of Creosote in almond oil will probably do good, but has not been generally accepted.

Although Tuberculin has seemed to be beneficial to some degree in local tuberculosis, does no good in the lung. HCl and Pepsin is often beneficial. Tubercular ulceration of larynx is one of the most serious complications of Phthisis, which gives rise to the most intense pain on swallowing, and to subdue this pain so as to allow swallowing use Cocaine, but as directed to ulcer itself use a spray of  $\frac{1}{2}$  gr. of Chloride Zinc to the oz. of water which may be increased to ii grs. if borne, and also good is insufflation of Iodoform. Patients may suffer from inability to swallow food; Paint the ulcerated surface with 4 per cent. solution of Cocaine about 10 minutes before swallowing food.

GENERAL HYGIENIC TREATMENT—Requires good ventilation and plenty of good air, exercise in open air. Nourishment, 2 to 3 quarts of milk a day and may be peptonized if necessary. Patient should always wear flannel as it keeps equable temperature.

CLIMATIC TREATMENT is of great importance in early treatment; if too late does no good, but in many instances the disease is arrested. Formerly it was held that warmth was what was desired, but this was found to be erroneous, as 'tis now found that factions in cold climate do good, but probably neither cold nor heat, but dryness and no vicissi-







tudes of weather. Elevations are said to be good, but should not be more than 2300 feet as haemoptysis is produced. Purity of air is insured by the heights. Sea shore at times is beneficial, although it is low and probably due to absence of bad germ. Probably the factor is the pressure of Ozone; this probably explains benefits obtained from large pine forests where turpentine converts Oxygen in part into Ozone. Choice of climate must be made by the experience of patients, as some are better in mountains and others on sea shore. As a rule Chronic Fibroids do best in Colorado. While for Catarrhal Phthisis where there is little breaking down go to Aiken, S. C., Thomasville, Ga., San Antonio, Texas. In early stage go to Switzerland, but not of late stage, and so it is with Adirondack mountains, but should not go in winter or late autumn, but should go in summer or early autumn and get used to the cold weather as it comes on. Many cases are arrested by living there a year or so. Somewhat like the Adirondacks is Ashville, N. C.; San Antonio, Texas, has been resorted to for dryness of soil. Los Angeles, Cal., patient is profited by experience.

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## DISEASES OF HEART.

Considered in group; 1st, Inflammation; 2nd, Chronic Structural or Organic, resulting from inflammation, and 3rd Functional or neurotic disease.

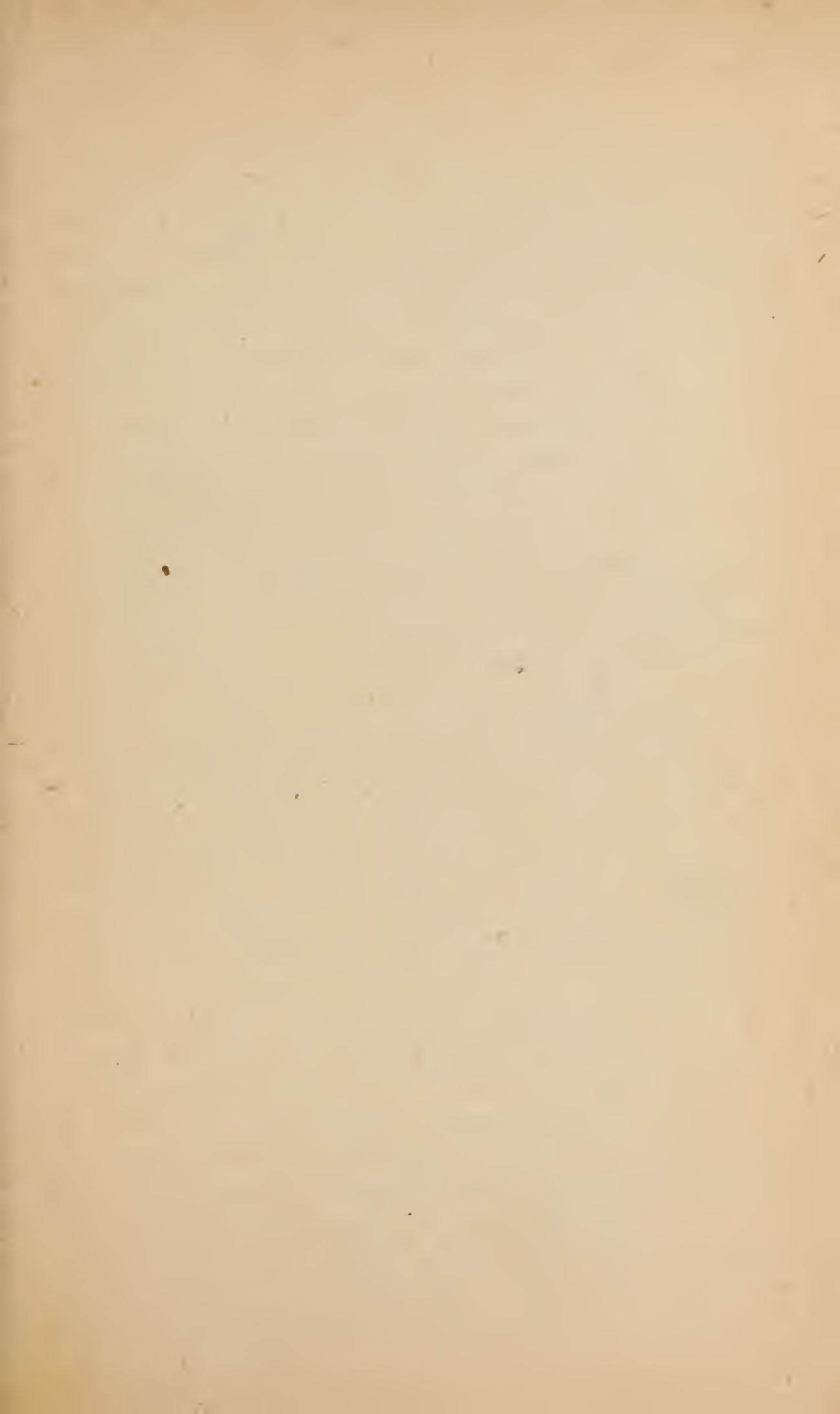
**Pericarditis.** An acute inflammation of the pericardium, which is a fibro-serous membrane with the fibrous layer attached to the diaphragm and to root of large vessels and serous layer adhering and spreading over the heart.

**MORBID ANATOMY**—1st, Some hyperaemia and congestion of vessels of pericardium, an exudation at first of fibrin, and in thin layer epithelium becomes swollen and cloudy and desquamates, hence loses its glistening appearance, is red and dry; 2nd, The fibrous exudate varies from a few lines to one-third inch; 3rd, This is followed by serous effusion which fills the pericardium to more or less extent. The

fibrinous exudation presents bread and butter appearance—i. e., villous. After death to find serum alone in pericardium without fibrin is probable. *Hydro-pericarditis* may occur without any inflammation of the pericardium itself; but at times find small amount of fibrin and large amount of effusion, and vice versa. Hence there is no relation between the lymph and serum. At times these morbid changes go on to pus formation, but they are not very common, yet do occur *haemorrhagic*. Fibrin is deposited in layers. If recovery occurs the fluid is absorbed and there is always more or less adhesion between the fibrous and the serous layers and at times this is so marked that the heart movement is hampered, because it has to lift the diaphragm and in order to do its work undergoes hypertrophy; this is not always the case as more often the adhesions stretch and hamper it very little or not at all.

CAUSES—The most common cause is *Rheumatism*, because the materies morbi of rheumatism sets up the inflammation. Next common is *Bright's Disease*, in consequence of the ill-elimination of urea in which find lymph and serum, but on other hand may cause simply Hydro-pericardium (dropsy), Septicaemia and Pyaemia (as after child-birth), Scarlet Fever. Sometimes it occurs from *wounds* (as stabs or gun-shot); of course it is an accident if pericardium is entered and heart not fatally injured. Some writers say there is *Idiopathic Pericarditis*, but probably rheumatism was the cause and it was unknown to writer. According to Sibson, Pericarditis occurs in one-fifth of all cases of rheumatism. This seemed to result in patients which had no treatment, which lessens tendency to pericardial involvement. Bright's Disease, fatal cases, 8 or 9 per cent., have pericarditis to some extent. Pyaemia causes purulent complications. Ordinary history is thus in Rheumatism joints are first involved and in about 4 or 5 days are pericardiac involvement, but at times Rheumatism Pericarditis occurs first. No doubt regardless of which occurs first the morbid product in blood is the same. Scarlet fever probably produces it, and no doubt the scarlatinous





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poison causes it directly or causes renal trouble setting up Bright's.

**SYMPTOMS**—Earliest is marked *pain*, like that of pleurisy, but located around pericardium, which is not under patient's control as 'tis increased or kept up by pulsations of heart; pains are lancinating but sometimes slight when only small involvement. Again pains run down the left arm which also occurs in other troubles, as cardiac nerves of sympathetic communicate through cervical ganglia with the Brachial plexus. *Tenderness* just over the heart is often observed, hence have percussion lightly. Effusion may occur in a few hours, generally not delayed later than two days, and when the liquid is poured out pain stops, as the two surfaces of membrane do not rub, but this is replaced by sense of weight and oppressed breathing, and if great effusion patient raises himself and leans forward and thereby the weight on the heart is lessened. *Pulse* at first full and strong, ranging from 90 to 120 per minute; after effusion takes place it becomes feeble and suppressed; if effusion very great it becomes very irregular, and at times intermittent and even dicrotic. *Temperature* usually rises 1 to 2 degrees and at times may reach 104 degrees. Of course, if preceded by rheumatism temperature will be of no value. When effusion is great pulse is weak and often irregular and intermittent. These symptoms may be caused by rheumatism, or Bright's disease, etc.

**PHYSICAL SIGNS**—In early stage tumultuous action of heart. On palpation you feel the same. Percussion should be done carefully, and in early stage don't get much; on Auscultation have the characteristic friction or grating sound which differs from Pleurisy, as it occurs synchronously with the heart and is not stopped by cessation of breathing, and it is more rapid than the pleural sound and is more superficial. It is a double or two-fold sound and at times may have the soft mushy sound which is very superficial.

**DIAGNOSIS**—Character of sounds of Endocardial and pericardial murmurs differ, as Endocardial are like blowing while the Pericardial are not, and the latter one more superfic-



ial. Again, Endocardial murmur goes with current of blood, and not so with Pericardial. At times friction murmur is increased by patient leaning forward. Again, at times if patient takes deep breath and holds it sound is interrupted. *2nd Stage:* When liquid effusion shows itself. *Inspection*, when effusion is small, perceives no apparent change, but when large there is seen to be a more or less arched or bulged appearance of chest. *Palpation* shows diminished evidence of cardiac action due to the superincumbent fluid. *Percussion* gives very apparently increased cardiac dullness, with its base above and apex below, but in this it is reversed and have base below. Auscultation shows disappearance of friction murmur, but if fluid does not fill the sac have normal friction at top. The normal sounds of heart are absent or their distinctness is markedly diminished. As resolution takes place there may be return of friction sounds with return of pain. Diagnosis rests upon and is easily made from Pleurisy and valvular disease of heart by careful study of the physical signs and symptoms.

PROGNOSIS—Is usually good. It <sup>A</sup>my become fatal from accumulation of fluids and inability of heart to accomplish its duty. Pericarditis from Bright's disease is more dangerous, as when the fluid is drawn off owing to the condition of blood it tends to rapidly recur. There is special liability to sudden death by making sudden change in position of body. This danger is directly proportionate to the amount of effusion.

TREATMENT—If rheumatic treatment has not been used it should at once be instituted, or if instituted should be pushed. Sodium Salicylate, grs. xv to xx every three hours, and Sodium Bi-carbonate, grs. xv in the intervening three hours. These are the best medicinal measures whether the pericarditis be primary or secondary. Blood letting was formerly employed but should never be done, as it causes hydraemic condition of blood and increases tendency to effusion in joints. If pain should be very acute and pulse be throbbing the application of leeches over the heart may give







relief, but this is seldom necessary. A hypodermic of morphia acts more speedily and more satisfactorily; mercury was much formerly used, but is better let alone, as it can do no good. A succession of light weight warm poultices (flax-seed meal, &c.), may give relief. When effusion is not too large in amount nature will take care of it, but when heart sounds are inaudible and pulse ill-defined a cantharides blister 6x8 kept on 2 or 3 hours over heart and then followed by poultice often causes marked diminution of fluid. Large dose of Tincture of Chloride of Iron promotes absorption and improves quality of blood. When effusion is very large with hobbling pulse surgical intervention is necessary. Aspiration is often hazardous as heart may be punctured and death follow. A better method is making a careful incision through integument down to pericardium, which should be caught by forceps and nipped. This should be made in 4th or 5th intercostal space midway between sternum's left border and mammary line. If aspirator is used should be used at angle of ribs in 5th or 6th intercostal spaces.

**Hydropericardium.**—Hydropericardium has some mechanical conditions. It is to be treated by blisters and instrumental interference, and active catharsis when the pulse will allow it is often followed by marked benefit; one-tenth to one-eighth grain Elaterium with alcohol, but if patient be weak this would be hazardous.

**Pneumo-Pericardium.**—Pneumo-Pericardium is recognized by splashing sounds synchronous with beat of heart. It is ordinary pericarditis accompanied by air in pericardium. It is rather a medical curiosity and furnishes nothing of special importance—most frequently due to injury or ulceration. In all cases of rheumatism it is the duty of the physician to examine heart daily for the first two weeks, and should delirium occur especially should heart be examined. Heart should also be examined in Bright's Disease and Exanthematous fevers. Hydropericardium most frequently due to acute Bright's disease, but is often an accompaniment of scarlet fever. In this condition there is no hyperaemia, but

simply a dropsical condition. Jalap powder co. should be used first, and if not sufficiently potent use Elaterium, gr. ~~1~~<sup>1</sup>/<sub>20</sub>th to ~~1~~<sup>1</sup>/<sub>30</sub>th for child 5 to 10 years old, and to adult give gr. ~~1~~<sup>1</sup>/<sub>12</sub>th.

**Exophthalmic Goitre**,—(Grave's or Basedow's Disease,) is an affection in which there is an enlargement and hyperaemia of thyroid gland and protrusion of eyes, cardiac palpitation, and Anaemia.

**MORBID ANATOMY**—There is enlargement of the Thyroid gland due to dilation of its vessels. Protrusion of eyeballs due to dilation of vessels behind it, and when patient looks down, in some cases the upper lid does not follow the eyeball. The thyroid body may be filled with cysts, or be enlarged from hyperplasia. These changes and rapid action of the heart occur simultaneously, and on them is based diagnosis. *Circulation and Cardiac Palpitation*—Circumstances render it probable that enlargement of vessels are due to disturbance of vaso-motor system, which allows passive dilation in neck thyroid body and orbit and at same time cause excited action of heart. Atheroma of ophthalmic arteries often observed. Occurs rarely in males; usually seen in young women between 20 and 30 years. A neuropathic tendency is usually strongly marked. Menstrual derangement attended by violent mental emotions of various kinds often precede its development.

**SYMPTOM<sup>AN</sup>ATOLOGY**—May come on suddenly with cardiac palpitation or pulsation of arteries; eyes slightly prominent and staring, afterwards may be so prominent that lids will not cover it; this is often increased by excitement. Cardiac palpitation grows more severe; the thyroid gland is visibly enlarged. Vision not disturbed but co-ordination slightly interfered with, eye lashes and brows fall out. Exophthalmus is often marked more on one side than on other, and then there is more apt to be enlargement of Thyroid body on opposite side; Thyroid usually enlarges slowly; voice may be changed by pressure of gland on recurrent laryngeal nerve; pulse very rapid; heart sounds are loud and soft. Mental







exertion or physical may bring on attacks of palpitation, debility, anorexia diarrhoea. In a few instances temperature may be up to 103, followed by profuse sweats.

DIAGNOSIS—Cystic Goitre. No Exophthalmos, no paroxysm.

PROGNOSIS—Be guarded. Younger subjects more favorable. May increase for few months, remain stationary, and then decline, but not wholly disappear; at times more slow and more rapid. Recovery in 4 to 5 per ct. of cases. Pregnancy said to exert a favorable influence. Death may occur from valvular disease, pulmonary diseases, Apoplexy, or Oedema.

TREATMENT—Quinine and Iron give best results. Traube gives 5 grains of Quinine one day and 10 grains Vallet's Mass on the following day. Arsenic does harm. Iodine good. Galvanization over cervical sympathetic diminishes pulsation and Exophthalmos. Hydropathic treatment highly praised by French. Diet should be meat and milk.

**Endocarditis.**—Exudative, Ulcerative, Interstitial or Myocarditis. Inflammation of Endocardium—i. e., the tissue lining the cavities of the heart and covering the valves; often extending to heart substance when it is called *Myocarditis*. Endocardium is made of connective tissue and covered with Endothelium, and continuous with lining of arteries, (analogous to serous membrane); most marked changes are seen in that portion covering valves; occurs in three forms, most common as an acute is *Exudative*, attended by exudation of fibrin. Ulceration occurs only when prolonged adynamia exists. *Interstitial* is usually the result of exudation.

**Exudative Endocarditis.**—Acute is very common, more commonly occurs in connection with acute rheumatism, seen more often on left side of heart involving mitral and aortic valves. About one in three cases of rheumatism have cardiac complication, hence more common than pericarditis; this probably refers to the inherent tendency of rheumatism to cause it, and treatment is not early instituted, hence importance of early rheumatic treatment. Often in cases of



rheumatism heart murmurs occur which are called functional, most common one is systolic in aortic area, which, after fall of temperature, etc., disappears.

**MORBID ANATOMY**.—The Endocardium is at first hyperaemic, then becomes infiltrated with cells. Becomes swollen and roughened to some extent, because papillary elevations occur, due to cell increase beneath Endocardium. These papillary elevations cause a whipping of the fibrin from blood which becomes deposited on edge of valves and orifices and cause Stenosis, or a curling of the valves which results in regurgitation; instead of this fibrinous deposit ulceration may take place, especially where vitality is lowered and the blood is septic with great inflammation. It is ordinarily rare but may occur in septic troubles as Pyaemia, Puerperal fever, Scarlet fever and Dýptheria, (was called Dýptheretic Endocarditis; Dr. Chew does not like it but says septic is a good name). In this affection valves become seat of pus deposit and ulceration results; there is nearly always some fault in blood. *Stenosis* at cardiac orifice may be due, 1st, to deposit and constriction of orifice; 2nd, to two valves adhering and not being able to open properly; 3rd, to curling of valves in orifice, which causes two murmurs; 4th, to fibrinous deposits on chordae tendinae, which prevents these from properly opening one of the segments. *Regurgitation* may be produced by, 1st, when valves are adherent by fibres to the orifice; 2nd, when valves are curled. Chew says the fibrin of the Endocardium comes both from the blood vessels as an exudate, and from the blood being whipped out by the villousities.

**Ulcerative Endocarditis**.—It may be associated with Bright's Disease and usually occurs in cases of prolonged adynamia. In this often death of edges of valves, and at times whole valves are infiltrated with pus, and at times the ulcerations are washed off and cause Emboli. Again valves may be perforated. In some rare cases this form may follow an acute exudative attack, without any previous adynamia. Edges of valves may be so disintegrated that pieces are







swept off and septic emboli be formed, causing systemic and pulmonary infarctions and hemiplegia. Virchow has shown that micrococci are in blood, and lodging in heart cause ulceration. The heart may so enlarge as to give to bulging of chest, which simulates aneurism.

ETIOLOGY OF ENDOCARDITIS—Probably always implies some previous disease, most commonly rheumatism, at times Bright's disease. Some say that it may come on as idiopathic, but this probably is due to an attack of rheumatism, which makes its primary attack on the heart itself. Whether it occurs from exposure to cold is very doubtful; scarlet fever may cause it. *Ulcerative form* due to pyaemia, puerperal fever, etc. Bright's Disease far from an uncommon cause of the disease. From the frequency of hypertrophy accompanying valvular disease, many think that hypertrophy implies valvular disease; but chronic interstitial nephritis may without any direct involvement of Endocardium cause hypertrophy.

SYMPTOMS do not readily lead to diagnosis of the condition without other signs. Frequent oppression, tumultuous action of heart and palpitation. Dyspnoea often prominent symptom, due to back pressure on lungs. Temperature not very high, generally 102 to 103. If higher very apt to be temperature of underlying rheumatism, and ~~After~~ all the physical signs make the diagnosis. (Remember that in the exudative temperature rises 1 to 2 degrees either above normal, or above temperature of the pre-existing rheumatism if such be present. If rupture of valve occurs there is sudden dyspnoea, cyanosis in extreme symptoms of embolism, spleen tender, typhoid state supervenes, and soon death closes scene. Patient sits up and leans forward.) In ulcerative form we have the existence of adynamia with septic condition. The temperature is apt to go suddenly to 106 to 107. The dyspnoea often urgent at one time from sudden giving way of valve. Abscesses may form.

PHYSICAL SIGNS—Inspection reveals irregular tumultuous action, with impulse often greatly diffused. *Palpation:*

Increased force at first, later the force is lessened, due to attenuation of heart. *Percussion*—in general in early changes gives no increase in extent of cardiac dullness; in children there may be. *Auscultation*—get most valuable results, and at first visit if rheumatism, Bright's Disease, or scarlet fever, make it a rule to examine heart. If early attack irregular action, but later often getting used to it becomes regular. Most marked, get blowing of bellows murmur, varying in position. Most frequently in mitral area, and systolic in time. It suggests that it was caused by motion of air, though air has nothing to do with it.

DIAGNOSIS made more easy particularly by the signs; Pericardial friction is comparatively superficial; does not proceed in direction of current of blood, but is localized, sounds to and fro. (Pain on pressure of stethoscope, and the apex pulsation is entirely or nearly lost in the latter part of pericarditis after effusion.) Recent and old murmurs often difficult to distinguish as physical conditions are the same. Along with the mere existence of murmur, if new, tumultuous and increased force, and may undergo changes from day to day, but in the old becomes steady and regular.

PROGNOSIS—Exudation seldom immediate cause of death in itself, still prognosis is always regarded as grave, as may cause other troubles which end fatally. Dr. Chew has seen but one case of rheumatic form end fatally, and that was in child with extreme stenosis. Patient often goes on with comparative good health with mitral insufficiency. In children especially, cases of mitral regurgitation have been recovered from; the explanation is that there was probably little vegetative growths, but simply a curling of valves which subsequently disappeared. Sometimes valvular disease of this kind is recovered from, but generally in this case no marked vegetation but only curling of mitral valve from inflammation, but as child grows up it entirely disappears. When history and symptoms point to ulcerative form prognosis is very bad, and when recovery occurs the diagnosis probably incorrect.







**TREATMENT**—For Exudative, rest; give heart as little work as possible, and keep patient in recumbent posture. Keep well protected with flannel over chest—never let it be exposed even during examination. Opium controls pain and relieves nervous irritability, as well as being an anti-phlogistic. Give it by mouth, or if pain great give hypodermically. Also give salicylate of sodium, or Salicylate of Lithia 20 grs. at intervals of every 2 to 3 hours. Along with it use alkalies, and press treatment until the urine becomes alkaline as probably they lessen liability to fibrinous deposits; after urine becomes alkaline probably little danger of cardiac involvement. HCN if pulse is strong though infrequent. Absolute rest, as far as possible should be insisted upon in acute rheumatism, as it lessens the liability of cardiac involvement. Should not sit up or move about at all. It may be open to some doubt whether Salicylate of sodium has any control over the inflammation of heart when caused by acute rheumatism, but at any rate it lessens the duration of the acute rheumatism, hence lessens the likelihood of cardiac involvement. Alkalies in acute rheumatism seem to act by lessening the likelihood of fibrinous deposits on valves by keeping the fibrin in a soluble condition, and probably also lessens the inflammatory condition in heart.

Ulcerative Endocarditis seldom gets well, because so apt to be associated with septicaemia or pyaemia, but can't in this case let pus out by surgical means and drain as can when suppuration is local. Also called malignant. If primary depot can be found, give the patient chance by evacuating, but when there are visceral lesions there is no chance, but give good nutriment and tonics of Iron, quinine and strychnine.

**Chronic Interstitial Endocarditis** ordinarily shows chronic disease, originating generally in acute Exudative form in which inflammation does not terminate but extends to the fibrinous layer beneath the Endocardium, to some extent in muscles themselves. At times it has no previous acute attack; in this case it is probably explained where, in some

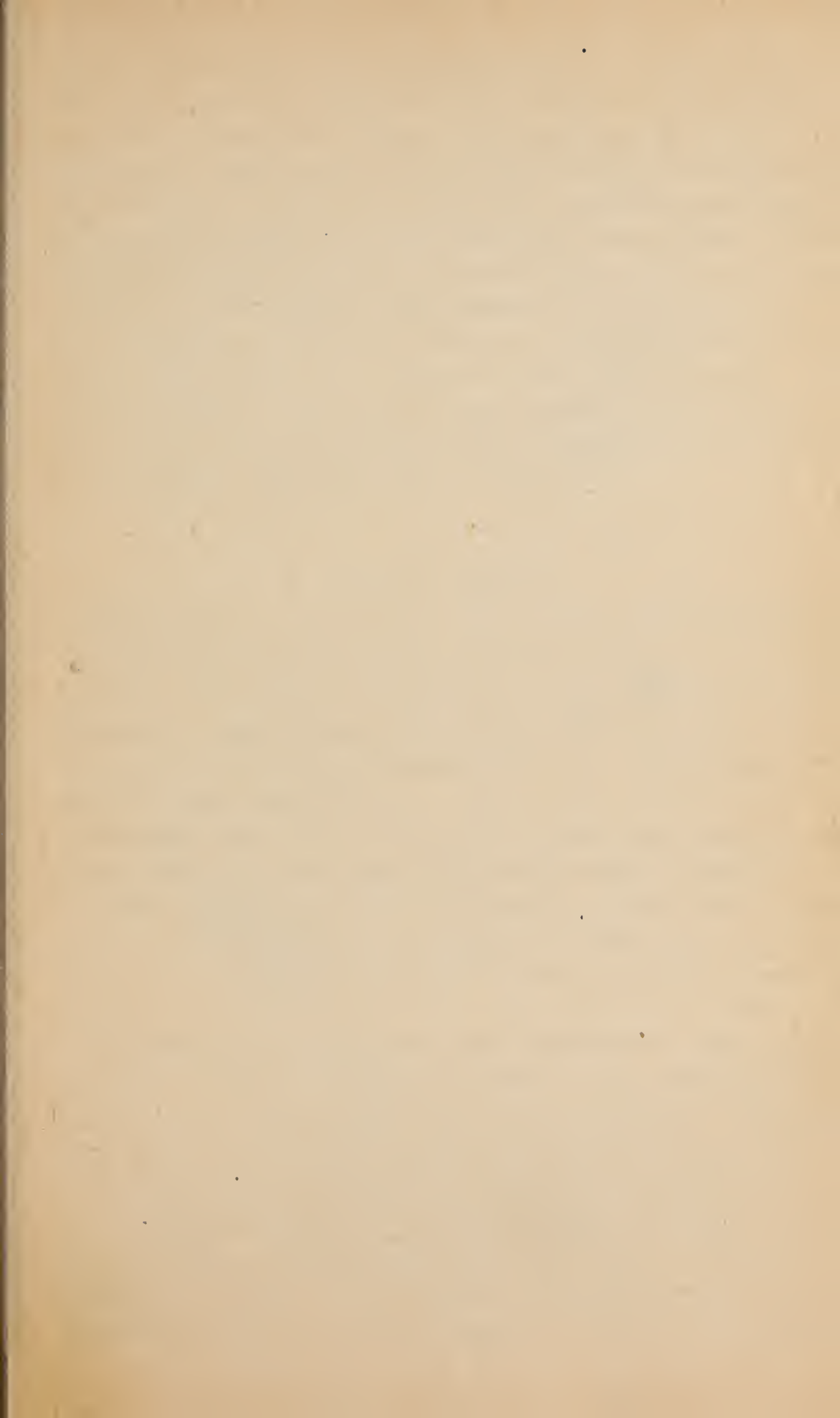


cases it attacks heart without Aortic involvement, yet acute symptoms are present. Explanation of other cases has had no acute stage, but begins as chronic inflammation; occurs in later life. (The thickened valves may become curled, and neighboring leaflets agglutinated, so that their original edges are hardly visible.)

**MORBID ANATOMY—POST-MORTEM:** Some thickening of Endocardium, especially that covering valves. Some increase in cells beneath Endocardium and extending to muscles themselves. There is thickening in heart substance itself, which may be the result of shrinkage and contraction, which interferes with the action of heart, but no auscultatory signs. The tendency of all interstitial inflammation is steady contraction of the tissues, and when this takes place on valves gives rise to curling, and hence the murmurs; the gradual increase in intensity of murmurs is due to the gradual increase in contractions. This may occur in gout, chronic rheumatism, old alcoholics, etc. Cordae tendinae may become thickened and rigid. Thick and curled valves may invite fibrin. (The edges of valves are roughened and made irregular, as also orifices as vegetation may form. The tissue affected by cicatrizing contracts; this takes place in valve as also in orifice, hence may have both stenosis and regurgitation, or simply one of them. These morbid changes occur in short time, in acute in one hour, but slower in chronic.

**SYMPTOMS,** ill-defined, and give little help to diagnosis. May be irregular action and sense of oppression about the heart, and the auscultations give us the diagnosis. Those lesions which are most common will be taken, first in importance because most frequent is Mitral Regurgitation or incompetency; 2nd, less frequent than above is Aortic Obstruction or Stenosis, the trouble being impediment at orifice of aorta, which interferes with outflow; 3rd, less frequent than above, but not so uncommon is Aortic Regurgitation; 4th, least frequent decidedly is Mitral Stenosis or obstruction. Lesions of murmurs of tricuspid and pulmonary







valves are important, but will not speak of. Two murmurs may occur together and in fact are not so infrequent—may be Aortic Stenosis and Mitral Regurgitation, or Aortic Regurgitation and Stenosis—less frequent mitral regurgitation and stenosis. To make diagnosis two cardinal points must be considered, not only for diagnosis but for prognosis. *First*, rhythm or time of murmur, when it occurs, whether on one hand it is synchronous with pulse beat, or whether it is in interval between the pulse beats, or occurs in place of first sound, or a diastole, or whether it occurs not through the whole of diastole before systole, (presystolic); *Second*, situation of murmur as regards its greatest intensity—e. g., whether it is heard in pulmonary area or tricuspid.

## HEART AREAS.

**Mitral Area** is a circle about 1 inch in diameter around apex beat at which mitral murmurs are most distinct; apex beat is about 1 inch below and half inch within nipple. Of course if heart is enlarged apex beat varies; often will hear it go towards base, but diminish as it goes up. Again may be heard between scapulae.

**Tricuspid Area.**—At left side edge of sternum, where the fourth, fifth and sixth rib cartilage join edge of sternum.

**Aortic Area.**—Aorta turns decidedly to right, and hence we hear sounds with greatest degree of intensity at right side of sternum about the second rib and second intercostal space.

**Pulmonary Area.**—At second left intercostal space close to edge of sternum. *Sounds* produced in one medium lose intensity when have to go into another medium. Again, sounds caused by fluid in motion is conducted by that fluid, hence the sounds are heard more distinctly at most superficial part of that valve, and the sound is propagated though intensity is lessened in direction of current of blood. *Second sound* caused by closure of the aortic and pulmonary valves. Main element in *first sound* is closure of Mitral and Tricus-

pid valve, which takes place simultaneous normally, but at times you get duplex sounds. Nearly the whole right ventricle is uncovered by lungs normally, hence the tricuspid is nearest the surface of chest at left edge of sternum, at 4th, 5th, 6th Costal cartilage. Aortic most superficial at aortic area. Pulmon, most superficial at pulmonary area, above named.

**SIGNS OF MITRAL REGURGITATION**—Systolic in time (first heart sound), and mitral in situation.

**AORTIC OBSTRUCTION**, also systolic, becomes curved at times from contraction of the heart, but heard at aortic area.

**AORTIC REGURGITATION** is Diastolic in time and aortic in situation.

**MITRAL OBSTRUCTION** is <sup>is</sup> murmur heard in the limited mitral area, and pre-systolic in time. The consequence of any of these lesions is a dilatation, which is quickly followed by a compensative hypertrophy in order to affect the balance of the disturbed blood on the two sides. The heart owing to the hypertrophy frequently weighs as much as 20 to 25 ounces. Stokes records a case where it weighed 64 ounces, the normal weight being 10 to 12 ounces.

**Mitral Regurgitation**—Blood passes back from ventricle to auricle during systole—occurs oftenest in young adults. The ordinary cause of Mitral Regurgitation is thickening and curling of the Mitral valves, due to rheumatism. In great amount of regurgitation there is also adhesion of the valves.

**CONSEQUENCES**—Early *dilatation of the left auricle* is apt to take place where there is much regurgitation, due to the two currents entering the auricles at the same time, the one from the lungs, the other the regurgitant current. There may be obstructions to the circulation of the lungs and *hypertrophy* of the right ventricle takes place; to overcome it the right auricle hypertrophies. In marked cases the whole heart becomes hypertrophied. When compensation no longer exists there is a *passive enlargement of the kidneys, liver and lungs, dropsy* in lower extremities. Compensation may be put to







an end by any strain upon the heart, due oftenest to disease, such as typhoid fever, etc. In Mitral Regurgitation the left ventricle becomes distended, due to hypertrophy of left auricle, it sending blood into ventricle in larger quantity and with more force. This distension gives rise to compensative hypertrophy. When this hypertrophy is no longer compensative, dilatation of the cavities, and thinning of the heart walls takes place. This result is dropsy, passive hyperaemia of lungs, with dyspnoea, congestion of liver, etc. (Mitral murmur is generally audible posteriorly in inter-scapulae region; more probably than any other murmur to be heard here.)

DIAGNOSIS—A Mitral systolic murmur is generally audible around apex of heart. A pronounced murmur is generally audible posteriorly in scapular region. There is increased cardiac dullness. Area of diffusion toward left, on level with apex.

PROGNOSIS is ordinarily good. Patients have lived 30 to 40 years with but little evidence of mitral regurgitation. The chief danger is the occurrence of Bright's Disease.

TREATMENT: Is called for when secondary dilatation sets in. *Digitalis* is the best remedy, but should not be given when perfect compensation exists. When venous stasis occurs it is indicated. Pepper says that combination of *tincture of nux vomica* and *digitalis* often acts better than *digitalis* alone. When sudden excessive dyspnoea comes on from enlargement of lungs in advanced case, the extraction of 12 to 16 ounces of blood often gives marked relief. *Iron* is of great benefit when associated with *digitalis*. The *digitalis* increases the nervous force of the heart, diminishes its frequency, increases elimination of urine. Indications for its use are swelling of ankles, passing small quantity of urine, liver protruding below ribs, heart-beat weak. It is neurotic in action, and like all neurotic agents it sometimes fails to exert its accustomed effect. Then *Strophanthus* should be used; it lessens arterial tension as well as increases cardiac energy. As a rule *digitalis* meets larger number of cases, and its ef-

fect is longer. The ordinary way of giving is gtt. x of tincture digitalis, t. i. d. When lesion is very great give gtt. x every 3 hours. Sometimes the infusion (deserts spoonful) seems to act better than the tincture; it may be alternated with the tincture. Dose of tincture of strophanthus is gtt. v. French physicians prefer digitalin in doses of ~~1~~ 150 to ~~1~~ 100 gr., given when stomach won't bear the above preparation. When stools have clay color, showing absence of bile in stools, give following pill : digitalis, squill, blue mass  $\overline{\text{aa}}$  gr i. (Symptoms from Loomis—when the right ventricle is unable to overcome the pulmonary obstruction caused by back pressure from left auricle, there will be more or less dyspnoea accompanied by hacking cough and expectoration of frothy serum. Dyspnoea increases by exertion. In advanced cases the extremities and face become blue, liver enlarged causing sense of weight and may have jaundice. Headache, vertigo and stupor from cerebral hyperaemia.)

NERVOUS PALPITATION OF HEART is well treated with tinct. valerian and bromides. Convalaria and scoparius are good heart tonics when digitalis fails to act. The infusion of scoparius good when kidney is implicated. Sometimes when dilatation is considerable, patient experiences cardiac pains—this is often relieved by belladonna plaster. If very severe a hypodermic of morphia may be used. Digitalis is very admirably combined with morphia, where there is cardiac pain. When there is hepatic congestion with considerable increase in size of liver, dullness and associated with clay colored stools, the occasional dose of calomel v grs. or blue mass, is most beneficial. These agents lessen the engorgement by draining the surrounding tissues of fluid, and stimulates the liver action whether directly or indirectly. Dyspnoea may come on at night, termed cardiac asthma, but treat it with Hoffman's anodyne. (Sp. Aetheria Comp.)

**Aortic Obstruction** comes next frequently to Mitral regurgitation. It causes an immediate compensative hypertrophy. This may result in Mitral regurgitation, the increased contraction of the ventricle causing the mitral valve to open in the reverse direction.



v.



CAUSE—Obstruction, though often due to *rheumatism*, is often the result of *calcareous deposit* affecting the arteries (atheroma), and the orifice of aorta is made smaller by deposit of the same material. It may cause adhesions of the two valves, so that they open imperfectly. It is a disease of later life. *Bright's Disease* is not uncommonly the cause. When not very great obstruction the hypertrophy may be compensative for a considerable time. The only symptoms being great floridness of face and a bounding pulse, due to increased action of the heart; the listener's ear may be raised by it. In no valvular disease is compensative hypertrophy sooner established. If obstruction is great the result is, on the contrary, constant *pallor*. This is the form most apt to result in the so-called *Beef-heart*, the term referring to the extreme increase in size of heart, especially the left ventricle. (Pulse is full and heart palpitates easily.) (Cerebral anaemia may cause attacks of syncope; this is late symptom and not usually appearing until after mitral valve becomes secondarily affected.) In very great obstruction there may, on the contrary, be a shrinkage of size of heart, because not sufficient blood flows through coronary artery. The force of the blood may be so great as to discharge part of the deposit and result in embolism; it is on this account that strokes of apoplexy and other brain lesions are not so uncommon in aortic obstructions. The left side of brain is the side oftenest affected, resulting in right hemiplegia, associated with aphasia. The embolus is most apt to rush past the innominate artery and enter left carotid. This valvular disease is most likely of all other forms to terminate suddenly. Mitral Regurgitation is not liable, nor is aortic regurgitation very liable, but mitral stenosis is liable.

PHYSICAL SIGNS—On *Inspection* the heart is seen to act with undue energy, and over larger area than normal, due to hyperthropy. *Palpation* gives sense of increased force of heart, and over larger area. *Percussion* gives increased area of heart dullness. The normal being a triangle with apex at sternum on level with 4th rib, and its base being a line

drawn from apex-beat horizontally to right to centre of sternum. (Often heard at apex on account of its loudness, but more intense at or near base.) *Auscultation* gives harsh murmur in aortic area, systolic in time. This murmur is often heard distinctly at considerable distance from heart, in subclavian and brachial arteries, and abdominal aorta. The murmur is often so strong and continuous as to mask the second sound. If stethoscope be passed to left side of sternum the second sound may be heard more distinctly, due to closure of pulmonary valves.

DIAGNOSIS—*From Mitral Regurgitation*—both are systolic, but aortic stenotic murmur is heard with greatest intensity in aortic area. This murmur must be diagnosed from mere *haemic* (anaemic) murmur, which is also systolic in time. The diagnosis is at times difficult. If there be no atheroma of arteries, and there be pallor with history of late disease, possibly the presumption is that the murmur is haemic. The haemic murmur is also *softer*, and not so harsh in character as the true aortic stenosis. Give Iron and other tonics and nutritious food.

TREATMENT. When compensation exists, a very quiet undisturbed life should be led. A saline purgative may be given every few days to keep down fluidity of the blood. Skin should be kept in action by warm under-clothing. When heart is acting with undue energy and is a distress to patient, aconite should be given gtt. i to ii of tinct. every 2 to 3 hours until its action is abated, then discontinue its use; when its effects have worn off may be repeated. As a substitute for aconite the dilute hydrocyanic acid dose m. i. at intervals of half hour until 3 doses are taken; then stop and give again if necessary in 4 hours. The HCN is probably better than aconite as 'tis less potent; hence less danger of over-sedation. When dilatation and loss of energy sets in digitalis or its allied drugs is required; also Iron. Moderate blood-letting in extreme hypertrophy, but as a rule purgation or above remedy will suffice. HCN will not accumulate; give with syrup of wild cherry and water; begin with







i. m., and increase to ii. (Aconitina, alkaloid of aconite, recommended by some authorities, but so potent a remedy is best let alone, because in the extremely small doses which must be given the druggist may make mistake in compounding and undue sedation be produced.)

**Aortic Regurgitation**—Third in frequency, and far from infrequent, where aortic semi-lunar valves fail to collapse and blood flows back into ventricle. (Some authorities say that aortic regurgitation is due to rheumatic endocarditis in 50 per ct. of cases; Chew says most frequent cause is atheroma.) Brought about more often by atheromatous arteries and alcoholism, yet it does occur in acute rheumatism; occurs mostly in later life, but does occur in young. One of the valves may be thickened and curved, and if bound back to aortic walls there will be no obstruction but simply regurgitation; but if tilted into ventricle there will be both stenosis and regurgitation; this is not uncommonly found.

**RESULTS**:—During diastole blood flows back into the ventricles; there will be two currents flowing into ventricles, the normal from auricle and the abnormal from aorta; this produces *Eccentric Hypertrophy*, and early dilatation in the extreme, more from gouty changes and atheroma. Rapidity of advance depends upon the size of murmur, and if it continues slight, it may not produce marked symptoms, yet it will not remain innocent very long, because early dilatation is greater in this than any other cardiac murmur. Chew says moderate amount of Mitral regurg. should not disqualify an insurance applicant, but while this is true of Mitral any other cardiac murmur would disqualify.

**CERTAIN SYMPTOMS**—*Pain* not very acute, though at times there is but a very mild amount of uneasiness; angina-like in character is more apt to be present in this than in other form, because the heart gets less blood than is necessary for its nutrition, because the semi-lunar valves do not close, but the blood is squeezed back into ventricle because of least resistance, instead of throwing blood fully into the coronary arteries, and brings about the same condition as Angina,

which is due to calcareous degeneration. *Pulse* normally full and elastic because column of blood is unsupported by valves, but we get an unsupported pulse called *Water Hammer* or *Carrigan's pulse*; not found in any other form, but after all physical signs give diagnosis. (Characteristic pulse is most marked when the arm is held above the head. Respirations are accelerated, and patient has attacks of vertigo and dyspnoea, and is compelled to sleep in upright position. Cardiac palpitation frequent, later on there will be orthopnoea, sudden starting in sleep, angina pectoris, may be albuminuria, and enlarged liver. When mitral regurg. exists the veins become over-distended, resulting in cyanosis and dropsy.)

**PHYSICAL SIGNS**—*Inspection*, increased area of pulsation, not as great as stenosis, (aortic.) *Palpation*, wider area of cardiac impulse. *Percussion*, increased area of dullness. *Auscultation*, diastolic murmur heard in aortic area, but often possibility of mistake if not careful, as it is often heard loudly at apex, because blood flows back. There is no diastolic Mitral murmur because regurgitation is systolic, and obstruction gives a presystolic murmur; viz. occupies only end of diastolic while aortic regurgitation occupies whole of diastole. The Angina-like pain is probably due to heart not receiving its proper amount of blood through the coronary arteries. Compensative hypertrophy not so apt to occur as in aortic stenosis.

**TREATMENT** depends on condition of things brought about. If mild and duration short no treatment necessary, but if it has lasted a long time, and dilatation, with tendency to passive stasis and dropsy, use digitalis or some of its synergists. Again small dose of arsenic used for ten days at a time, and stop for week, and begin again, good, as it promotes nutrition, and tends to relieve cardiac neuralgia. Give Fowler's solution, or arseniate of Iron. Try it, and in any kind of angina-like pain give iron and digitalis. If over-action of heart give Aconite or HCN. For hepatic congestion give salines.







**Mitral Stenosis.**—Least frequent—due to deposit and thickening about mitral orifice, or to curling of mitral valves; often accompanied by mitral insufficiency when valves curl towards the auricles. Blood-flow into ventricle is obstructed.

**RESULTS**—Earliest result is hypertrophy of left auricle, although at first hypertrophy, it soon gives way to considerable degree of dilatation which causes backward pressure into lungs, with the results of same—most apt to occur in early life, as most often due to rheumatism.

**SYMPTOMS**—*Marked pallor*, as blood to system is lessened in a marked degree when lesion is extensive. Pulmonary hyperaemia is brought about. *Cough* constant is symptom in this degree, and in this form *haemoptysis* is more frequent than in any other form of valvular disease.

**PHYSICAL SIGNS**—*Palpation*, most marked is feeble impulse, being due to quantity of blood in ventricle being less. So when you place hand on heart, get purring thrill, most common in this form. *Percussion*—increased cardiac dullness upward to left, most conspicuously, increased partly from hypertrophy and partly from dilation. *Auscultation*—get murmur presystolic in time, heard at mitral area—so-called presystolic, because it is only at the end of diastole that the auricle gives the squeeze to force the last blood out of cavity.

**DIAGNOSIS** is made by the physical signs. Hypertrophy rapid and well developed, soon gives way to dilatation if affected to marked degree. Sometimes find second sound of heart re-duplicated, probably caused by the backward pressure of blood which causes a somewhat quickening of closure of pulmonary valves.

**TREATMENT**—Often Anaemia exists along with it on account of the ventricle having too little blood, and probably the blood making function is interfered with, hence *iron* is indicated. *Digitalis* is indicated when dilatation takes place with stasis in different parts of the body. Dropsy at times is early in this disease; treated chiefly by *digitalis*, and if very great give *purgative*: best compound jalap powder, which



does not sedate the heart. Always remember that treatment is not to be directed to the valvular lesions *per se*, but to the conditions consequent upon them, viz: Sedatives, when over-action; Digitalis, when dilatation, etc.

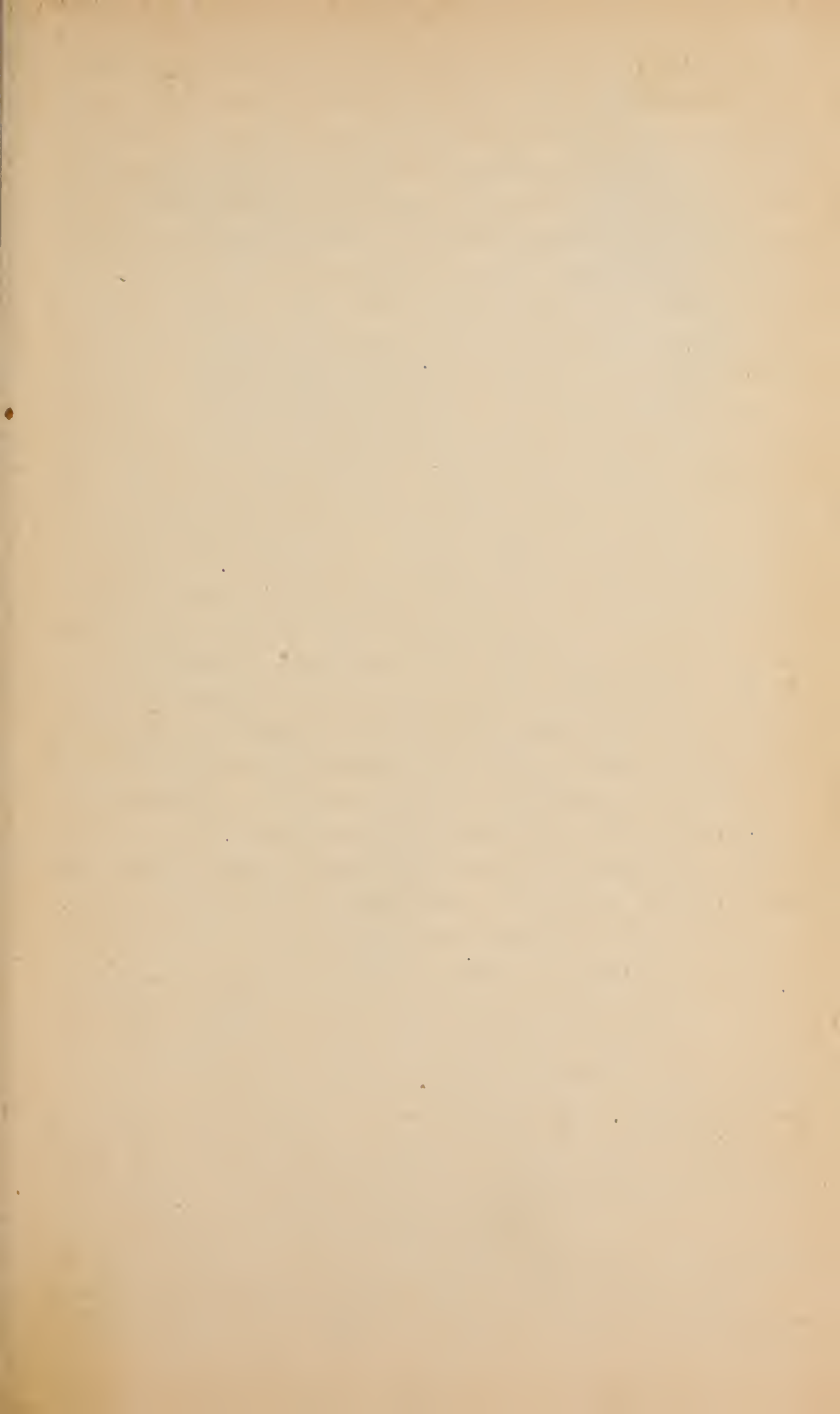
**Fatty Diseases of Heart.**—Under this are two distinct forms. First, fatty degeneration of muscle fibres or *Quaine's Disease*; second, fatty deposit or imposition, i. e., accumulation of deposit of fat upon the heart or between the fibres, without affecting them at first.

**MORBID ANATOMY**—Fatty Degeneration or true degeneration, the fibres become distinctly granular, gradually lose their striæ; at first there seems to be albuminoid degeneration, but later deposit of fatty globules of various sizes, hence fibres tear and break down in proportion to amount of disease. Heart yields to pressure, and hence becomes distended; color is pale yellow, at times diffuse, at times in spots because interval between them is unaffected. Change is most in degree, and most frequent in left ventricle.

**FATTY INFILTRATION OR FATTY DEPOSIT** cannot be accounted for. Increased formation of fat; muscles themselves not affected at first; on opening chest find heart enveloped by mass of fat, but sometimes the mere pressure produces change in muscle fibres. In True Degeneration death is often caused by rupture, but in imposition is not. The sudden cause of death from heart disease is in the majority of cases produced by rupture from fatty degeneration. Fatty deposit may cause fatal syncope by overpowering heart.

**CAUSES**—Fatty degeneration not apt to occur before 45, more commonly after 60. At times associated with *Gouty changes*, or caused by alcohol. Again, at times associated with malnutrition, which is due to the obstruction of the coronary artery, it being due to *atheroma*, and this is cause of frequent association of it with angina pectoris (failure of aortic recoil, etc.); often have it revealed without angina and vice versa, but in residual number of cases they are associated. (Often prominent sign of marasmoea, which comes on in course of *Bright's Disease*, *chronic alcoholism*, especially if associated with syphilis, phthisis, etc.)







SYMPTOMS OF BOTH DISEASES are obscure, often unrecognized, progress is slow; when marked the least exercise causes feeling of exhaustion, dyspnoea, often feeling of uneasiness rendered greater by exercise. Digestion disorders, and often have Cheyne-Stokes breathing, viz: very deeply breathe several times, and then gradually becomes shallow and shallower, until it seems that person is not breathing. Again, Arcus Senilis, (the old man's bow,) or fatty degeneration of cornea, does not always mean fatty degeneration of heart. Cornea near junction of sclera is of greyish appearance. Pulse often irregular as to strength of beat, as well as to rhythm. Attacks of angina pectoris may occur, skin pale pasty yellow hue. Impossible to form absolute diagnosis, but as we have no marked physical signs, we have to diagnose by inference. In fatty deposit we may have no symptoms for sometime, but when great, have feebleness or muffleness of sounds and increased area of dullness. Causes of infiltration, associated with that form of general obesity which so frequently comes on after middle life. Sedentary habits predispose it, and it is often associated with chronic alcoholism. Extremities are cold, perspires freely from slight exertion, irritable temper, depression of spirit. *Inspection* may have diminished impulse, in infiltration due to ~~fat~~ *fat*, while in degeneration due to weak contraction. *Palpation* in both feebleness of impulse. *Percussion*, enlarged area in both, but in degeneration not until the dilation occurs. (In advanced cases there are cerebral symptoms, vision is disturbed, failure of memory, vertigo, sudden attacks of cerebral anaemia may cause syncope or Epileptiform attacks.) *Auscultation*, irregular rythm, and feebleness of heart sounds; especially first sound. If we find the signs of dilatation, and feeble heart-beat and no valvular lesion, it is probably degeneration. In infiltration have general obesity, and feebleness of heart-beat, and increased area.

PROGNOSIS—As to recovery bad. May live a long time in infiltration, but in degeneration nearly always fatal.

TREATMENT FOR DEGENERATION—Keep excreting or-



gans in order, stop exercise, use of alcohol, but in infiltration put patient on diet of lean meat, fish, skimmed milk and vegetables with little starch, (more especially the salad variety.) Purgatives may be employed, and certain amount of systematic exercise; increasing the distance of walk every day, until walk 10 miles.

FATTY DEGENERATION TREATMENT is just the opposite, give iron and cod liver oil; be careful and do not take too much exercise. Question of whether digitalis is indicated or not; some say that may produce rupture of heart, but Dr. Chew says use it properly, viz: give it until marked stoppage of frequency, and when there is increase of force stop it. Of course in extreme cases where there is very much dilatation best probably not to give; iron should always be given.

**Angina Pectoris.**—(Neuralgia of the Heart—Stenocardia.) Angina Pectoris is distinctly a cardiac neurosis, not essentially associated with any organic disease. It is however, often associated with fatty degeneration, aortic stenosis, aortic regurgitation, and atheromatous deposit at the aortic orifice which affects the coronary arteries. The resiliency which is normally caused by closure of the valves is lost in regurgitation, etc. Often entirely independent of that we have marked attacks, some of which do not occur more than several times, in others remain for several years. Diminution of blood supply to heart through diminution of calibre of coronary arteries, by atheromatous changes most frequently associated with physical condition. Seizures are spasmodic in character—the whole heart is not spasmodic at once as such would be incompatible with life in most cases—but in those which terminate suddenly in death it is probably due to spasm of whole heart. The arterial tension is increased, hence impediment to onward flow. It is a disease of late life, not likely to occur before 60 years, but if it occurs earlier may continue beyond that age.

SYMPTOMS—Sudden violent pain in praecordial region, maximum intensity at ensiform cartilage, and it radiates







over chest and down the arm, especially left arm because cervical sympathetic nerve is the center and communicates both with cardiac ganglia and Brachial plexus. Although there is a constant underlying cause, yet the expression of the disease is paroxysmal as occurs in many neuroses—e. g., epilepsy, neuralgia, etc. Pain is agonizing and lancinating<sup>IN</sup> in character, and is accompanied with sense of impending dissolution. In most instances occurs in people of higher mental attainment, can't explain why, but Chew saw only one case in lower class; great many instances in literature about it; viz., Dr. Arnold of Rugby, whose father died before him and somewhat later his son John Hunter died of it. (Symptoms usually begin when cardiac asthenia is suddenly interfered with, or its movement impeded by some mechanical cause. At first patient becomes deadly pale, face with anxious expression, surface covered with cold sweat, pulse falters and may be imperceptible, respiration short and hurried, patient unable to lie down or move unless suffering is intensified.) Either in those who have had great mental training, or those born with high mental powers, consciousness not lost. (Note—Sometimes heart so much disturbed that syncope and death occurs.)

DIAGNOSIS—*Asthma* comes on most often at night. Each has suffering and sudden dyspnoea and paroxysm, yet altogether different, as suffering is not of acute pain, but sense of apnoea from lack of oxidation, but this cures itself when blood becomes sufficiently carbonated—but not so with angina, also have rales in asthma. *Intercostal neuralgia*: Three tender points (Vallaic's). Pain not so great and often stopped by holding breath. Cardiac disturbance absent. *Acute Pleuritis*: Pain less by holding breath, and then have auscultatory signs.

PROGNOSIS always bad, as when it once occurs there is considerable liability to recurrence—attacks become worse as they occur—death may occur during any paroxysm, but usually after it has existed for some time. Underlying cause still present, but if begin treatment soon after it once com-



mences may do a great deal to alleviate suffering and to prevent frequency of attacks.

TREATMENT—*Nitrite of Amyl*, discovered by Brunton of England, who observed that in angina the arterial tension was much increased, shown by smallness of pulse and the sphygmograph, and then studying physiological action of amyl nitrite he found that it suddenly relaxed arterial tension, and enlarged the calibre of small blood vessels, which is seen easily by inhaling v to vi m. of it. This led to a trial of it, and it gave more relief than any drug used. *Opium* was used formerly, and at early days did not use it hypodermically, which is the most potent way of using it, but great advance over it when nitrite of amyl was used; *chloroform not to be used*. Nitrite of Amyl is contained in little glass pearls containing v to vi minims; let patient carry them in box always; when needed put one in kerchief, break and inhale; patient should see from time to time whether pearls have lost their contents, as may even slowly evaporate through pores of glass. *Arsenic* will, at least in considerable number of cases, diminish tendency to the frequency of attacks and their severity, probably by partial action, as neurotic and cardiac tonic. Best mode is to give it in intermittent courses to prevent arsenical poisoning; give v drops Fowler's solution at first, and gradually increase to ten drops, but never more, in wine glass water after meals, for 2 weeks, then stop for week or so; then repeat same. Very frequent association between angina and Bright's disease, especially chronic interstitial variety, and it is probable that same change which affects kidneys also causes fibroid changes of arteries; viz: atheroma. *Nitro glicerine* advocated by many to be given during the intervals in small doses, and hypodermically during attack. Give  $\frac{1}{200}$  to  $\frac{1}{100}$  gr. t. i. d., best in tablets.

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## DISEASES OF STOMACH.

Inflammatory Diseases are of three different kinds. Gastritis: Acute, Sub-acute, Chronic.







**Acute Gastritis, Toxic Gastritis.**—In true sense is really synonymous with toxic gastritis; same class as that caused by taking food, which Chew says is sub-acute, not acute.

**MORBID ANATOMY**—May be intense redness, in some erosion, and in more severe cases perforation; but in mild cases where it was mild poison or neutralized, etc. early, may be only hyperaemia and redness, though in severe cases perforation of stomach. (Mucous and sub-mucous soft and oedematous, fibro plastic exudation may cause occlusion of pylorous or cardiac orifice.)

**ETIOLOGY**—Due to actions of various poisons; may be oxalic acid, arsenious acid, which is most frequent, sulphuric acid, HCl, etc., phosphorous; Alcoholic Gastritis is due to alcohol, when taken undiluted in small or large amount. More commonly it causes sub-acute, as strong alcoholic drinks are generally diluted.

**SYMPTOMS** come on soon after taking food and may be caused by swallowing; pain is burning and is increased on pressure, nausea, vomiting first of contents of stomach, then mucous stained with blood, hiccoughs common, temperature may rise to 104 to 105, pulse quick and feeble. The violent symptoms give place to general prostration and collapse. Pulse rapid and irregular, surface cold, respiration rapid and irregular, and death may finally occur. There is intense thirst, urine scanty and highly colored, mind clear to the last. Pain darts through the spine, spasm of abdominal muscles apt to occur.

**DIAGNOSIS** is to be made by history and symptoms, which often are difficult to get, if due to murderous intent or suicide, as person tries to deceive you, and strange to say that in very considerable number of cases the suicide uses one of the corrosive poisons, instead of using opium or HCN. Probably due to mental aberration.

**PROGNOSIS** better when treated soon; the greater the pain the more violent the inflammation, and later seen the worse it is. Death may be at once or later from slow starvation, or slow ulceration through stomach and death from peritonitis later.

TREATMENT, mainly antidotal, viz: for alkalies give an acid as lemon juice or vinegar, or still better oily substances, which form soap, which is comparatively inert. (First thing give proper antidote; second wash out the stomach with pump if seen at once, but not if late as may perforate stomach.) If acids give soda or magnesia. For oxalic acids, best is salts of lime, because with soda and other alkalies forms ~~insoluble~~ insoluble compound. Again, do not depend simply upon antidote, but let drink freely of water, and empty stomach by pump. *For arsenious acid*, give the hydrated sesqui oxide of iron, best plan give it adlibitum, and not 12 to one, because cannot estimate amount of poison taken always. For corrosive sublimate, give albumin; subsequent treatment give opium for pain, hot fomentation over abdomen. At times leeches are good. Rest in horizontal posture should be continued through whole treatment.

**Sub-Acute Gastritis.**—(Acute gastric catarrh,) more frequent than acute, less intense.

CAUSES—Not caused by active poison, but often attributed to indigestion, diet especially in hot weather and when person is fatigued; often digestible food causes it when taken in undue quantities. Alcohol often causes it; no period is exempt from it. Occurs at times in course of disease, where blood is deteriorated, typhus, small pox, scarlet fever, measles, etc.

MORBID ANATOMY:—Limited to mucous membrane, not the intense redness of acute, no sloughing and ulceration, but marked changes in coating of stomach with tenacious mucous. When due to acute alcoholism delirium tremens may often complicate it. Secretion of gastric juice is diminished in quantity, and to great extent its digestive powers. At times superficial sloughs are seen from size of pea to three cent piece. Vomiting at variable intervals is a common *symptom*, first, of stomach contents, and soon mucous, and often bile, not because it is in stomach but from continual pressure of abdominal muscles in repeated act of vomiting on gall bladder. (Vomited matter may at times be







streaked with blood, accompanying nausea and vomiting is more or less pain which is generally not severe, unless firm pressure be made over stomach. Breath is offensive. In alcoholics vomiting mostly in morning. M. M. spotted with red, scattered over it in irregular patches, changes most notably seen in the crevices between the ridges.) Thirst great, absolute anorexia, temperature not very high, 101 to 102. Diarrhoea often ensues late in disease, and stools have very offensive odor. Tongue is heavily coated with yellow or ash-colored material, and becomes dry and red at tips. Papillae elevated.

PROGNOSIS ordinarily passes off in a few days when due to common cause, which is withdrawn. If from alcohol, at times very obstinate.

TREATMENT:—Abstinence from food for a day to give stomach rest; then first article of food is skimmed milk, adding tablespoonful of lime water to tumbler of milk, which prevents curdling. If, in spite of the above, the symptoms continue, two measures may be tried, first, nutrient Enemeta of peptonized milk, not more than half pint at a time, and repeated 3 or 4 times daily for a few days. But now and then, after treating in the above manner, the patient becomes nauseated but does not vomit; then give HCl. in 1 gtt. doses. (*Diagnosis* made by careful study of its symptoms and causes, milk oz. i. every 1 or 2 hours. Wash out stomach 3 times daily, when the patient is unable to hold anything on stomach, and there is vomiting of viscid mucous. After washing give milk and lime water, and it will digest.) When nausea is accompanied by eructation of gas, due to fermentation, you should give creosote, (best is Morsum's beech wood,) gtt. 1 in tablespoonful of lime water, or instead of creosote gtt. half carbolic acid; later on when all irritant symptoms have ceased give mild bitter tonic, and along with this may give preparation of pepsin, *R.* HCl. *dr.* j, essence pepsin *dr.* iij, teaspoonful after meals. Infusion of columbo or cascarilla, both good bitter tonics. Again quinine in solution 1 to 2 grs. before each meal.



**Chronic Inflammatory Dyspepsia** (Morbid sensibility.)  
**Chronic Gastritis** (catarrh,) may be sequel of sub-acute forms.

**MORBID ANATOMY**—Mucous membrane is thickened and covered with thick mucous, the tubules are swollen and the secretion is not poured off, and hence constitutes mamillated appearance. Changes most notedly at pylorus, appearances vary with intensity and duration of disease. Over whole membrane is thick grey tenacious mucous, the thickness of which varies. On removal of the mucous the membrane is studded with ecchymotic spots; walls of stomach are usually thickened, and more or less indurated, especially in pyloric end, which causes more or less pyloric obstruction. Has leathery feeling, tears with difficulty, and can be stripped from sub-mucous tissue. When sub-mucous tissue is involved there is cell infiltration which becomes organized, connective tissue contracts and hinders the peristalsis to more or less extent. Gastric tubules are hypertrophied, for their secretion is retained by the tissue increase in intertubular structure; these will stand out and give the appearance of small granulations termed Mammillated appearance. In long continued cases muscles may be involved, and the peristalsis still more inhibited; finally the peritoneum may be involved, and adhesions take place between it and adjacent parts. Microscope shows at times that the epithelium of tubule has undergone granular degeneration, at other desquamated, and the tubule filled with granular detritus. If tubules are constricted at their opening cysts of retention form, may undergo fatty degeneration or dark color—if hemorrhage extravasation takes place; if continues very long time superficial ulcers may form.

**SYMPTOMS OF CHRONIC GASTRITIS**—Chiefly those of indigestion at first. First sense of weight and fullness in epigastrium, sometimes amounting to constriction, which comes on half to one hour after meals. Later there is actual burning sensation or pain (heartburn,) increases on pressure which causes it to shoot up towards scapulae, following or with the advent of these is anorexia complete, accompa-







nied by nausea and eructation; the stomach and intestines are often distended with gas. Most important dyspeptic symptom is acid mucons rising after meals, or acid regurgitation of mucons in early morning. The acid material when belched up in oesophagus causes heartburn. Vomiting may occur, but not as frequent as in the acute and sub-acute. Tongue coated brown or white. If vomiting of food does occur traces of butyric acid, and *larcinae ventriculi* are found, which are cuboid cells, divided into four parts, and look as though strapped like bale of cotton; it is to these that fermentation is due. Thirst becomes prominent symptom. Patient loses strength and becomes emaciated after having it some time. Constipation is usually present. When of long standing skin becomes dry and sallow, hair dry and may turn grey. Hypochondriasis and despondency more or less marked. If accompanied with cirrhosis of liver, have haematemesis. If accompanying Bright's Disease vomit early in morning.

DIAGNOSIS—Functional atonic dyspepsia, which shows tongue pallid and flabby, accompanied with an anaemic condition, dependent upon habits of life or unhealthy occupation; while gastritis accompanies immoderate use of alcohol, or is secondary to chronic affection of lungs, kidneys, liver, heart, etc. Pain little or none at all, always present in gastritis. Spices and stimulating injections often relieve symptoms of atonic dyspepsia, aggravate gastritis; nausea and vomiting not apt to occur in dyspepsia.

PROGNOSIS depends upon cause of the disease, and the probability or possibility of the removal of the cause. Is amenable to treatment except when due to advanced renal, hepatic, or pulmonary cardiac disease.

TREATMENT—Remove cause, reform patient, give tonics, etc., and restrict diet, etc. Washing the stomach out with warm mild alkaline solution is advised by some in severe cases, but in milder cases patient may drink large glass of hot alkaline water before eating. If hepatic disease exists give occasional mercurial purge. If associated with phthisis

it is very obstinate. Bismuth acts well locally. Same method for fermentation, and rest to be used as in sub-acute. One of the most difficult troubles to treat is when it comes on from the use of alcohol, because the patient has sense of feeling for want of drink, especially in morning, and when he takes it aggravates local trouble. Give bitter tonics with tinct. of capsicum; this relieves the local feeling, which causes central disturbances. *R.* Comp. tinct. Cinchona oz. ij, Tinct. nux vomica dr. ij, Tinct. Capsicum m. xv, give a teaspoonful every 2 or 3 hours. If associated with dilated heart, give digitalis and iron, which by toning up heart can hope to do some good. Few fats or carbohydrates should be eaten.

**Gastric Ulcer** occurs in two forms, (1) the round, chronic, or perforating ulcer, and (2) the broad, spreading or superficial ulcer.

**MORBID ANATOMY**—The size of the perforating ulcer may be that of pin head to that of half dollar. May end fatally by perforating the entire wall of stomach, and the contents be poured into peritoneum causing septic peritonitis, or it may simply go through the mucous membrane, or to the peritoneal coat. Spreading ulcer is very superficial, of pale color, surface covered with viscid mucous and epithelial cells. In shape it may be simply punched out or be conical, the base being towards the cavity of stomach and apex externally. A vessel may be involved, and gastric hemorrhage result. If hemorrhage is profuse apt to be due to the round, but if slight the superficial, which simply involves the mucous membrane. About one-eighth of all cases of round ulcer are said to end fatally by perforating the wall of the stomach; this is explained by the voracity of the disease, and the difficulty to cure.

**SYMPTOMS**—Pain more or less constant, gnawing in character, frequently aggravated on pressure, and comes on more severe after taking solid food in stomach. If it comes on immediately after eating, probability is that it is in the cardiac extremity; if relieved by lying on back, probably ulcer







is on anterior wall of stomach, if increased on lying on post wall. 1st—*Pain* in epigastric area, but may extend down to umbilicus, again there often occurs pain in the back, in region of 8th or 9th dorsal vertebra; this is sympathetic reflex pain and of considerable diagnostic value. 2nd—*Vomiting* is prominent symptom; it may be only food, or may be more or less mucous. This is especially true of the broad ulcer. More frequently in the round than the broad have vomiting of blood, which is of bright florid hue, due to erosion of vessel. 3rd—*Hemorrhage*—Again, hemorrhage may occur without it being expelled by vomiting, and there has resulted sudden syncope from bleeding into the stomach. Perforation is followed by peritonitis, and its symptoms may occur, viz: sudden severe pain, extreme tenderness, tympanitis causing great distension of abdomen, thready pulse, and knees drawn up on abdomen.

ETIOLOGY—In many cases is difficult to discover the cause, especially of round ulcer, which is much more frequent in young females than in males between ages 18 to 30, especially when there exist menstrual disturbances, which although not positively known yet seem to indicate that they are due to some neurotic influence of uterus over the stomach, just as in vomiting of pregnancy, or may be due to disturbance of atropic nerve fibres, as is Herpes Zoster. Spreading ulcer occurs in late life and cause is often chronic gastritis. Commonly believed that the stomach digests itself, when trophic disturbance exists causing the round.

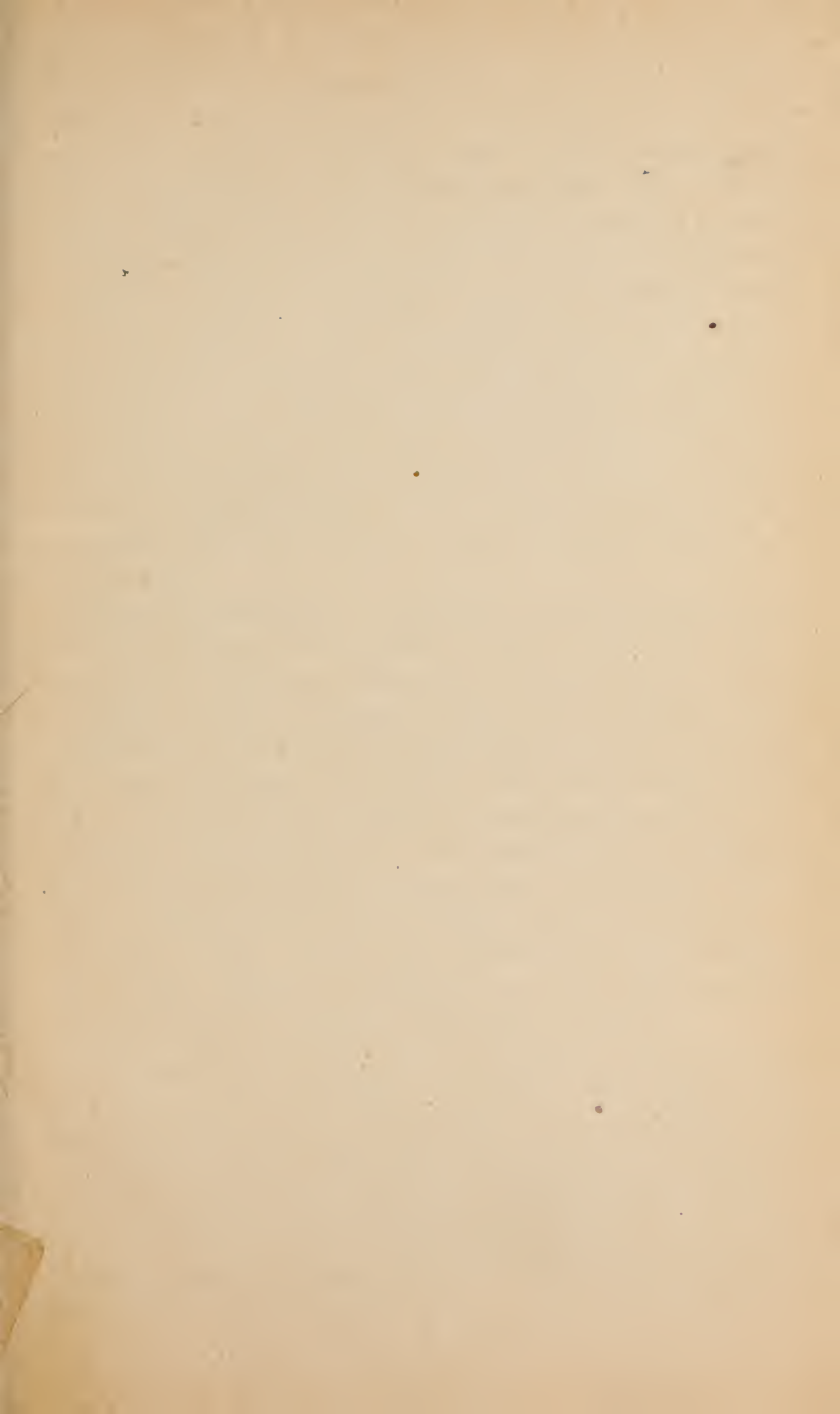
DIAGNOSIS—Must be made from *cancer of stomach*. 1st, In cancer we have a tumor perceptible sooner or later, but never in ulcer. 2nd, Cancer occurs only in late years, after 40. Ulcer is round only in early life, spreading in later. 3rd, Cancer is more or less hereditary, ulcer not. 4th, Cancer has continuous sharp lancinating pain, not relieved by vomiting nor by withholding food; which differs from gnawing pain of ulcer, which is most severe after eating. 5th, Hemorrhage in cancer is dark and grumous, ("coffee-ground" appearance), and on microscopic examination cancer cells can

be detected, while in ulcer hemorrhage is a bright florid and contains no cancer cells. *Chronic Gastritis*—Pain not so severe, history either of chronic cardiac, renal, hepatic, or lung disease, or of alcoholism. Coated tongue, great thirst prominent. Vomiting often comes on early in the morning, whereas in ulcer comes on after ingesting food.

PROGNOSIS—Patient may die from inanition, being unable to take food; may die from copious loss of blood, or from perforation and peritonitis. Estimated one-third cases end fatally from hemorrhage or peritonitis. May last from 3 weeks to several years.

TREATMENT—Four indications: first, rest of stomach; second, arrest of hemorrhage; third, relieve pain; fourth, bringing about cicatrization. *First*, rest by adopting nutriment suitable to condition of stomach, or withholding food for time. The food should act as poultice to the ulcer. Milk is the best in peptonized form, and add to it a little lime water,  $\frac{1}{2}$  oz. to tumbler of milk, which is not enough to make the taste disagreeable, (once in two or three hours.) Warm milk may be given in  $\frac{1}{2}$  ounce doses every half hour. Should this still give rise to pain, give nutrient rectal enemata, viz., once in 4 hours, inject half pint of peptonized milk, or peptonized animal broth. Enema should not be employed too often, as rectum will become irritable and eject its contents. *Second*, Cold externally and internally for hemorrhage; crushed ice internally frequently, and ice bag over abdomen. If above does not stop it, inject mxx F. Ext. ergot hypodermically. Do not give any haemostatic or mineral astringent by stomach, as only aggravates the existing condition. *Third*, indication is relief of pain, which is often severe and distressing, and is sometimes relieved by attending to alimentation as above stated, but if it continues employ an opiate and regulate it by amount of frequency of pain. Best use hypodermically, and at night it produces sleep. Ease pain by checking peristalsis. A warm poultice over epigastrium will often relieve, but should not be used if attended by vomiting. *Fourth*, Cicatrization is best brought







about by obtaining rest for stomach. Best medicinal agent is Bismuth Subnitrate in doses of grs. xx to xxx. It gives a bland protective covering to the mucous membrane of stomach. Another exceedingly useful agent is silver nitrate, gr.  $\frac{1}{4}$  t. i. d., in tablespoonful of water. The taste of it is harsh and metallic, and it is therefore necessary to give in pill form, with extract of gentian. Its use must be persistent for two weeks. For *Argyria* to be produced, it must be given for 2 months. Alkaline waters, as Bedford or Carlsbad, have same beneficial action by preserving the alkalinity of stomach, hence lessening irritation, which is produced by acid gastric juice, or fermentation. If the above waters cannot be had, give grs. ii Bicarb. Soda in water every half-hour or hour. Constipation often occurs, which should be relieved by saline aperients, as above waters, castor oil, half oz., or by enemata.

**Cancer of Stomach**—(Carcinoma,) is a frequent disease, one-third of all primary cancers said to have their seat in the stomach. Primary cancer of stomach is often followed by cancer of liver. The uterus is the most frequent seat of primary cancer. The liver being most frequent, if both primary and secondary, are taken into consideration. Most frequent forms are, first, ~~Sc~~irrhous; second, Medullary; third, Epithelial, in the respective order named. Any of these are liable to undergo colloid degeneration. Three-fifths of all cases of cancer are at pyloric orifice; next in frequency is the cardiac orifice, and it cannot then be palpated, being under the ribs. When at pylorus may involve the duodenum. When at cardiac end may involve the oesophagus.

**CAUSES**—Most frequent between ages of 45 and 60, and more frequent in male than in female. May occur earlier than 45th year. Not so hereditary as other diseases, viz: tuberculosis, hence if only one case in history of family life insurance is granted. Heredity is regarded as predisposing cause, the actual exciting cause is not known; may be due to some form of microbe, but nothing known as to what produces change into cancer cells. Vomiting may be due, first to cancer; second, reflexly.

SYMPTOMS—Earliest is *want of* appetite, then comes sense of uneasiness, retching, nausea and vomiting. Pain then comes on, not acute or constant at first, but gradually increases until it becomes lancinating. Pain not made worse by taking food, nor does it cease after digestion, but it continues, thus differing from ulcer. As tumor grows vomiting increases because the size lessens the calibre of stomach, or causes pyloric obstruction, which causes regurgitation or reflexly by irritation, or lastly by fermentation, on account of det<sup>Rior</sup>erated gastric juice. In advanced life pain may be inconsiderable or absent. This may exist for several months before a tumor begins to develop, which is the only absolutely diagnostic sign. The symptoms increase in severity as tumor grows, there is increased nausea, increased frequency of vomiting, and increased severity of pain. In cardiac orifice cancer, food may be regurgitated from the oesophagus without it reaching the stomach. This is a diagnostic sign but cancer in pyloric orifice causes vomiting later, and hemorrhage often occurs from ulceration of tumor, but not profuse. Blood is dark in color, presenting "coffee-ground" appearance. Microscope shows disintegrated blood corpuscles, and cancer cells. *Pyloric Cancer*, involving duodenum, may give rise to persistent diarrhoea, stools have dark stony color and offensive, called *Melena*. Skin has a greenish yellow color, but in pyloric cancer may be changed to jaundice from pressure on bile duct. Tumor may be felt and seen to pulsate from its position over the aorta.

DIAGNOSIS from Ulcer:—(1,) Have no tumor; (2,) hemorrhage bright florid color; (3,) pain is gnawing and comes on shortly after eating—i. e., it is more severe; (4,) age, the round occurs in early female life, the broad later in life; (5,) no coffee-ground vomit, etc., tumor is nodular and tender; (6,) absence of free HCl in cancer vomits. Tumor palpable in 30 per ct. When tumor pulsates, put patient in knee-elbow position and if then the pulsation persists it is an aneurysm of aorta; if pulsation ceases it is probably cancer. If belly-wall is thin, and bilateral pulsation is felt it is abdominal aneurysm, if felt in knee-elbow position.







PROGNOSIS always bad, duration varies from first indication to fatal termination, from 2 months to 3 years. Average result, duration about one year. Death results most often from gradual exhaustion, inanition, hemorrhage uncommonly, or gradual spreading of peritonitis sometimes.

TREATMENT—Is greatly palliative. Bismuth subnitrate in large doses (20 to 30 grs.) does good; Bismuth subgallate 5 to 10 grs. Bismuth simply acts as protective poultice and often relieves pain in early stages. Postpone giving opium until necessary. Morphine best given hypodermically as effect is produced by small dose. Sulphite of soda, dose 20 to 30 grains, for fermentation. Aid digestion by pepsin—with very little dilute HCl m. v, with 1 drm. essence of pepsin. Put off opium as long as possible, it will have to come at last. Flatulence may occur; for this give creosote drops 1 to 2 in drm. j, lime water, or carbolic acid gtt.  $\frac{1}{2}$  in drm. j lime water. Sulphite of soda has often excellent results for the same purpose. By washing out the stomach the thick tenacious mucous is removed; it should be done twice daily. Constipation best relieved by enemata or pill aloes. *R.* Aloin gr. i, Ext. Belladonna gr.  $\frac{1}{4}$ , every night or every other night. To retard growth of cancer give arsenic, it may do some good; give small doses of Fowler's solution v. gtts. t. i. d., after meals, for 2 weeks, then stop for a week, after which recontinue for two weeks. Same rules about rectal alimentation as in ulcer.

SURGICAL INTERFERENCE—Abdominal section may offer some relief, or do good in prolonging life, if not recurring. When food can't be retained rectal feeding should be done with broths, beef tea, and peptonized milk; do not give too large a quantity, gills 2, always difficult as after a time rectum becomes intolerant from irritation. Where pyloric cancer is taken out at early period, has been successful in quite a number of cases to give temporary life.

*Taken from Loomis*—Diagnosis between acidity of stomach and Hypersecretion. Fermentation. 1st, Pain after eating, or often pain before, but relieved by eating. Pain comes on

sometime after eating. 2nd, Urine acid. Urine alkaline or neutral. 3rd, Recent vomit contains excess HCl. Vomit seldom contains sarcinae. 4th, No flatulence as a rule—always flatulence. 5th, Produced reflexly. History of some cause constitutional symptoms, greater, viz: constipation, sallow skin, emaciation, etc.

**Dilatation of Stomach.**—Not uncommon, but less frequent than cancer or ulcer. Sometimes thought doubtful if it occurs as acute, but generally as chronic disease. The acute form is usually due to eating or drinking too much, where there is probably condition of impaired nutrition of stomach which allows dilatation. Essentially a chronic gradually advancing state. Stomach may at times be only slightly dilated, or at times great, in one instance it was capable of holding 90 pounds of fluid; when obstruction exists at pyloric orifice walls first become hypertrophied, then become thin and dilate, usually up to left.

**CAUSES**—Probably the most frequent is narrowing of pylorus, due to cancer, or ulcer, which contracts by cicatrizing ulcer. Tubercular tumors, or cancer, etc., may also cause it, when situated in meantime in glands, liver, duodenum, gall, bladder, etc. Often associated with floating kidney, which probably is due to pressure on pyloric extremity, most frequently the right kidney. In other cases changes seem to be due to atony from lack of nutrition. At times anaemia is only assignable cause, due to failure of nutrition; probably most frequent cicatricial, assignable cause is chronic gastritis, when rarely occurs *voracious appetites*, and over-eating. First, constriction of pylorus from cicatricial contraction of pylorus, due either to corrosive poisons, ulcer, fibroid induration, etc. Second, chronic gastritis; when accompanied by voracious appetites, etc. May be caused by cicatrix in stomach, from ulcer which dilates. Often several causes are operatus.

**SYMPTOMS**, rather obscure at first, patient has gastric uneasiness, at times pain, vomiting of large quantity of food or drink may occur every day once or several times, or every







other day. Emaciation from loss of nutrition. Spasms of muscles of leg occur at times, constipation is present. Pyrosis often annoying and painful. Fetid eructation.

**PHYSICAL SIGNS**—Inspection gives prominence of abdominal wall above umbilicus from enlargement, and at times the whole outline of stomach in well marked cases and peristaltic action may be seen also in such cases. *Palpation* gives rise to elastic resistance owing to presence of fluid and gas in stomach; when both hands are placed over stomach a splash may be perceptible on sudden movement, peristalsis is felt. *Percussion*—Gives in upper part when gas is present tympanitic resonance, and below where food is, dullness, when standing or sitting up. Dullness shifts when there is change of position by lying down. Again, when patient stands, if he gradually drinks two to three tumblers of water, dullness increases from below up. *Auscultation*—May give the splash, when there is fluid taken and patient moves little quickly, or by tap on epigastrium.

**DIAGNOSIS** made by close study of signs and symptoms with history of case.

**PROGNOSIS** is often bad, because often due to pyloric obstruction; prognosis good when treatment is early instituted; may in some cases restore stomach to normal condition, but this is not common.

**TREATMENT**—Restrict diet by giving liquid diet and in small quantity. The catarrhal condition should be treated by giving bitters, especially strychnine with other bitters, as calumba, angustura, etc. Although above should be used yet no good results can be expected from it alone, but wash stomach daily once either with warm water, or mild alkaline water of Bi-carbonate or Borate of soda. The washing should be continued until water comes clear. If much fermentation use antiseptic solution of Boracic acid or quinine—the former in 3 per ct. and latter in one-fifth per ct. solution. Or sodium chloride solution often acts efficiently.

**DIAGNOSIS** is to be made from Hydatids of Liver and Ascites.

*Ascites*—Lower part of abdomen is distended.

Area of abdomen broadened and flattened.

On lying on back fluctuation.

Dullness not increased by drinking water.

*Hydatid of Liver*—Tumor does not change its shape or position when fluid is taken in stomach.

Position fixed and no gastric symptoms.

The special diagnosis is of the cause. It is important to ascertain whether due to obstruction at pylorus, and if so what is the nature of the obstruction. The two important ones are cancer and cicatricial contraction from gastric ulcer, the history will be of value in both.

**Duodenitis.**—Inflammation of duodenum, doubtful if ever an independent affection. Far more commonly it results from extension of the inflammation from stomach, thus we may have acute, sub-acute, or chronic gastro-duodenitis. Probably it sometimes forms extension from enteritis, thus giving an entero-duodenitis. Sub-acute gastro-duodenitis is most common. More often in children, not so uncommon in adults.

**SPECIAL SYMPTOMS**, other than those of gastritis or enteritis. *Pain* not acute, occurring in 1 to 2 hours after eating; *tenderness* on pressure horizontally in the hypogastric region. *Jaundice* is common, due to thickening of m. m. membrane, and oedema of submucous tissue, which obstructs the opening of bile duct and gall bladder. Bile tends to accumulate in bile duct and gall bladder, and resorption occurs, and thus it is mechanical jaundice.

**DIAGNOSIS** is made by the above symptoms; viz: pain continuing from the gastritis (which occurs at once after meals,) half hour afterward, and jaundice which is a most marked sign.

*Dilatation*—Upper part of abdomen is distended.

Not so in this.

No fluctuation.

Dullness increased.

*Dilatation*—Tumor changes.

Have gastric symptoms, and position not fixed.







**TREATMENT**—May subside of itself, but much better to treat, as laity think jaundice is symptom of liver trouble. If any tenderness in hypogastric region, apply warm poultice which invites blood to surface. If decided fever with tenderness apply several leeches, which act as revulsives; generally poultice will suffice. *Internal Remedies*—Very gentle aperients, best which act on upper part of alimentary canal and deplete. Best is sodium phosphate, grs. 10 to 15, to children (5 to 6 yrs. old), repeat at intervals of 3 to 4 hours until watery evacuation takes place; it relieves congestion of blood vessels of mucous membrane, and thus prevents any more obstruction and bile absorption, and that which is in system is eliminated chiefly by kidneys. If nausea is a marked symptom small fractional dose of calomel, one-tenth to one-twelfth gr. on tongue, not only will stop the vomiting but also causes depletion in upper part of alimentary canal. In reference to dietetic management, especially avoid fatty or oily matters, because the pancreatic outflow is interfered with, and often fatty stools are seen. Give tea, toast, milk with lime water, etc. Insure as perfect stomach digestion as possible, giving HCl and pepsin.

**Enteritis.**—Inflammation of enteron, or that portion below duodenum above colon, (jejunum and ilium). Not uncommonly coincident with inflammation of colon, called enterocolitis. Again, may occur with gastro-duodenitis, or may be associated with inflammation affecting the rectum, dysentery.

**MORBID ANATOMY**—First, congestion and tumefaction, then free mucous flows which later may become muco-purulent, not uncommonly the Peyer's patches are more or less inflamed and elevated, but seldom to ulceration as in typhoid fever. Solitary follicles also undergo same change—inflammation is not specifically ulcerative. At times, when inflammation is very intense, in addition to above may be thick fibrinous exudation which looks like dyptheritic membrane, and the membrane beneath is eroded when you strip off the fibrin. This generally is limited to large intestine,

and more grave than the other form. This membranous or dyptheritic form is not so common as above simple muc-enteritis. In some cases inflammation extends through sub-mucous coat and affects the muscular tissue, and even the peritoneal coat may become involved. This is called *Phlegmonous Enteritis*.

VARIETIES—First, simple *catarrhal* enteritis, in which only the mucous membrane is involved; second, *Dyptheritic*, in which in addition to mucous there is plastic exudation of lymph; third, *Phlegmonous*, higher fever, formation of pus, and affects mucous, sub-mucous, muscular, and at times even the peritoneal coat. In some cases may become chronic, mucous membrane remaining thickened. Most common is the simple catarrhal.

CAUSES—Generally due to action of some direct irritant, as *purgative*. No doubt it at times occurs from exposure to cold, which causes enteritis, while this is true yet it is probable that direct action of irritant is the more common cause. Often the *food* may be of improper character when taken, especially in children, yet although proper food it may pass down undigested, on account of large quantity, and irritate. *Impure water* not an uncommon cause, thus: Typhoid bacillus cause typhoid fever, or bacillus Coli causes dysentery, yet other agents the nature of which not known cause the Enteritis. In *burns* the upper part of the jejunum and the duodenum becomes inflamed, when one-third surface of body is involved by burn, (causing inflammation of Brunner's glands.) Not at all infrequently it accompanies *chronic malaria*—whether the organism produces it directly is not known. *Kidney disease* (Bright's) also has it; also associated with *obstructive cardiac troubles*. Occurs at all ages, including children; two predisposing causes are very hot weather, progress of dentition which debilitates, so that irritation is caused by food undigested.

SYMPTOMS—Vary somewhat with the area and intensity—most common is *diarrhoea*, which at first consists of undigested food, then comes more or less mucus and bilious and







serous discharge. First, when large amount of mucus, probably the large intestine is also affected. When large amount of serum, probably small intestine is only affected. When large amount of bile, probably indicates that trouble extends to the duodenum, and its irritation produces hurrying down of bile. Sometimes blood is passed and if mixed thoroughly with mucus and serum indicates that it comes from small intestines. If not mixed indicates that it comes from large intestine. (Almost pure blood.) *Pain* marked, and is not relieved by pressure, as is the pain of colic. So with pain of enteritis, have some degree of tenderness. May be at times *nausea and vomiting*, which at times indicate gastric disturbances also, but not always, as sometimes have vomit without gastro-duodeno-enteritis. *Fever* as a rule not high, average 101, 102, 103, unless of the Phlegmonous form when it extends to 104 to 105. *Pulse* apt to be frequently 100 to 120, pretty full and compressible, differing from corded pulse of peritonitis. *Tongue* more or less dry and thickly coated, yellow about middle and dorsum. *Jaundice* may occur, indicates involvement of the duodenum.

PSEUDO-MEMBRANOUS ENTERITIS is due to fibrinous exudate and is characterized by passage of shreds of membrane, and at times the coat of intestine shows that the disease is more serious, fever higher, and indicates that the inflammation extends to large intestines.

PHLEGMONOUS ENTERITIS—Increased pain, temperature, and tenderness, with passage of pus. Temperature 104 to 105.

DIAGNOSIS: *Hernia—Enteritis*. H—Sudden pain, localized. E—Gradual advance. H—Examination shows hernial protrusion and usually no fever. *Peritonitis* from *Enteritis*. P—Pulse is corded. E—Pulse is full. P—Tympantitis. E—Not generally tympantitis, and if it is, shows that inflammation has extended to serous membrane. P—Pain very severe, with knees drawn up to prevent weight of bed clothes.

PROGNOSIS—Depends on form. *Simple Catarrhal* prognosis most favorable. *Membranous* more grave. *Ulcerative* form most

grave. Then the cause, if it depends on kidney or heart disease, of course alters prognosis, but in ordinary as we find it, viz: simple catarrhal prognosis is good. Signs of good are diminution or abatement of pain, lowering of fever, diminution of diarrhoea, and change of contents of stool. In simple catarrhal termination is usually in 3 to 4 days. Death may occur in simple form, especially in one debilitated, or where one is addicted to alcoholic habits.

**TREATMENT**—Keep patient in *bed*. Regulate *diet*. Give at first a *mild cathartic* to remove undigested food, if you see case early. Rochelle salts, zii, or effervescent solution of citrate magnesia, a half bottle, or castor oil which, although nasty, is particularly appropriate because it is bland. Confine to diet of *milk*. Warm *fomentation* over abdomen. If after the aperient acts there is no abatement of symptoms, especially pain and diarrhoea, put patient on *opium*; best form is Dover's powder, adult dose grs. x every 3 to 4 hours, until pain is relieved; or Deodorized Tincture of Opium. In severe cases where fever is high give *quinine* and *phenacetine* along with the opium. However, never start out treatment of Enteritis with opium before you have given aperient. It sometimes happens that severe symptoms have subsided and you still have diarrhoea; you may then give *chalk mistura* and *astringents*, or Bi-subnitrate 20 to 30 grs., or Beta-naphthol x to xv grs., every 3 or 4 hours, or Subgallate of Bismuth. Warm fomentation over abdomen is good for pain, opium allays nervous irritability, quieting bowels and inflammation. May give  $\frac{1}{2}$  to 1 gr. every 2 to 3 hours in pill form, according to effect. Better than morphia. Stools should be examined to see whether there is any undigested food passed. Effervescent cathartics are especially good when stomach is irritable. May add lime water or Bi-carb. potash to milk. May give 15 to 20 gtts. Deodorized Tinct. Opium. If pain is very great give Magendie hypodermically; Subgallate of Bi. checks fermentation, and often better than sub-nitrate, dose v to x or xv grs.

**Dysentery.**—Restricted to inflammation in colon and rec-







tum, generally catarrhal, but may be croupous from discharges of follicles; when croupous have fibrin with mucus. Seat is m. m., and to certain extent sub-mucous coat and to great extent glandular apparatus. \*Some call it a local inflammation, others call it an acute specific general disease, having local manifestations. Both are right, as in some cases there is only a small amount of fever and no germ, while others have a specific germ (*amoeba coli*.) Epidemic because water sources become infected. Specific dysentery more grave as to advance and rapidity of changes.

MORBID ANATOMY—In mild cases changes are mostly limited to lower part of colon and the rectum mainly, while specific traverses the whole large and small intestines, as germs enter by mouth. First changes noted are congestion and redness from slight pink to deep red or purple mottled hue, membrane is swollen, and the membrane as well as sub-mucous membrane is infiltrated and oedematous. Solitary follicles are enlarged, and surrounded by enlarged and congested blood vessels which break, and blood is discharged from follicle. In some cases ulcers are formed by follicles, sometimes several blend together and make a long ulcer. Mucous membrane of large intestines has poorer supply of blood than any other mucous surface, hence may have large ulcerous slough or even gangrene. During convalescence ulcers cicatrize, but instead ulcers may perforate and cause peritonitis, and at times peritonitis is formed without perforation. Liver is congested often in severe form, (as a rule not in ordinary sporadic.) Abscess of liver is commonly caused by the severe attacks of dysentery as pus is carried there, or at times the specific germ is carried there.

CAUSES—Often prevail in malarial region; whether due to congestion simply or to plasmodia not yet definitely known. Condition of alimentary canal and liver caused by the *amoeba coli*, discovered by Larsch. Some cases are mild, others severe and grave. Local dysentery may be caused by cold or poor digestion, or from extension of enteritis.

SYMPTOMS—At first involves constipation, malaise, and

*loss of appetite.* Constipation previous to attack, which may alternate with *loose bowels*. Severe attacks liable to be ushered in by *chills*, and rise of *fever*, 103 to 105, higher according to severity of attacks. *Pain* severe in abdomen, ringing, twisting, etc., called *Termina*. Frequent *desire* to go to stool, and no relief by stools, due to sympathetic contraction of sphincter, called *tenesmus*. At first the stools are partially *foecal*, but later become hard masses or *scybalous*. Depression of nervous symptoms, then *mucous* and later *blood*, stools vary from 6 to 8, even 30 to 40. If the upper part of intestine is the seat blood and mucus is mixed; not if only lower part. *Tongue* moist and heavily coated. Later shreds of mucous membrane are passed, having appearance of washing of meat: At times later on pus is passed. *Pulse* full at first, frequent, and feeble later. *Stools* may have gangrenous odors at last. May have *hicough* very severe, and *subsultus tendinum*, and patient may finally die of cardiac exhaustion. Although the stools increase in frequency, the quantity at each is lessened, until only little stool and blood. If case is going to recover, indicated by stools less frequent, which acquire *foecal* odors, less blood, etc. In malarial country the symptoms will be at times paroxysmal remittent.

DIAGNOSIS—*Enteritis*, no tenderness nor straining, not as much blood, greater amount of mucus discharge, but not so frequent as that of dysentery.

PROGNOSIS, good in simple or malarial dysentery, if treatment begins early; not if late, as may become grave. In malignant and epidemic is bad. Simple duration 8 to 10 days. May, however, become chronic, not becoming deep, but broad superficial ulceration and last for years.

TREATMENT—In all cases there is a possibility of its being specific. So always *disinfect* the stools with  $\text{HgCl}_2$  solution, let not the stools be emptied in a place where persons are liable to come in contact with them but bury in ground. Keep patient in *bed*, cover abdomen with broad *flannel* rolled not too tight. At the very outset give an *aperient* to remove irritating matters. Castor oil is good combined with an







opiate, and at outset may cut short an attack, best is Italian castor oil, *drm.* ii to iv, with *gtts.* xx to xxv *tinct. opii*; repeat in four or five hours if not enough; give a saline next, as Rochelle salts, *drm.* ii in water (or soda water or vichy), every two hours until bowels move freely; give also *gtts.* xx *tinct. opium*, but should pain be very great give aperient alone, and morphia hypodermically. May give 30 *gtts.* *tinct. opium* in 2 oz. starch water in rectum by enema, after canal is cleansed by passage tenesmus is lessened. *If evidence of malaria*, put patient quickly on quinine. Aperient to remove the offending masses and the scybalous masses, and by serous outflow they tend to relieve the congestion of part, and if used early probably in many cases cuts the disease off. Give xv to xxv *gtts.* *tinct. opii* with aperient. If symptoms not entirely relieved continue administration of opium. *If decided fever* and fullness of pulse, apply 4 to 5 leeches to anus. If fever not so high but tenesmus great give *drm.* ii 4 per cent. solution of cocaine in rectum.

Method of treatment applicable in *hot country*—Ipecacuanha treatment was introduced first in the East Indies by the British. Patient is treated by giving 20 to 30 grs. powder Ipecac mixed with little water at a dose—has almost specific effect. If above dose given produces vomiting, prevent this by applying mustard plaster for 15 or 20 minutes on abdomen, then give ipecac a few hours after the temperature falls, tenesmus ceases, bowels more feculent, etc. This is severe in ordinary dysentery of temperate zone. Mortality reduced from 10 per cent. to 1 per cent. in East Indies. Some form of counter irritation over abdomen, as warm poultice is often good. Give quinine xx to xxx grs. a day by mouth, or give it hypodermically; stimulants are urgently needed in adynamic forms, in certain cases enema of quinine solution grs. v to x Or kills the germ. *If chronic ulcers* have occurred it may resist all treatment; then you must try and promote cicatrization. Persistent use of tincture of chloride of iron has done good, by acting as a local astringent in its elimination, dose *m.* xxx to *drm.* i every four hours. Large doses



of Bismuth locally is often good. Nitrate of silver 1 to 11 grs. to oz. i of water, inject quart at time. Commence with one gr.; if pain severe afterward inject saline solution, 1 to 2 a day, and ~~if~~ there is diminution of mucus, ~~and~~ blood and pain.

**Acute Peritonitis.**—Inflammation of whole or part of the serous membrane covering the intestines and abdominal wall, may be acute or chronic. If local symptoms it is *limited*, or *diffuse* if over the whole.

**MORBID ANATOMY**—It begins by great congestion of the blood vessels which may vary in intensity, but in acute is very marked, and may rupture and give rise to Ecchymosis. Epithelium loses its glistening appearance and undergoes cloudy swelling, and finally desquamates. There then occurs an exudation of serum and fibrin, one greater in some than in others, and vice versa. Serum gravitates to bottom unless adhesions have occurred and <sup>becomes</sup> cause incised. Fibrin may be very thin or even one third of inch thick and after death adhesions between two layers of membrane. Incised peritonitis may be caused by formation of adhesions, or at times may cause portion of intestine to be glued together and result in obstruction; or again, bands may form between two layers and knuckles of intestines may be caught after recovery and cause obstruction; fatal unless relieved. The muscle of intestine beneath peritoneum becomes paralyzed, and hence great amount of Tympanitis, which is one of the diagnostic signs. In some the serous exudation is very large and fibrin small, and in others the serum small and fibrin large, in others both large. In some cases suppuration occurs, and thus have *purulent peritonitis*. Sometimes opens in alimentary canal, in others has taken place in vagina. Again, has evacuated through the diaphragm, through bronchi. Although not always necessarily fatal, yet is almost universally so. When the suppuration is diffuse the surgeon will not operate, which is the only thing that would do good. If localized by adhesions quite different. In all cases can be considered grave. Recovery has







occurred when no outlet has been found, the fluid element having been absorbed, and solid element undergoes cheesy degeneration.

CAUSES—Rarely if ever spontaneous, but is brought about by ordinary causes which produce inflammation in other parts; questionable whether ever caused by cold. It is either primary, or secondary to disease. One of the causes is intestinal perforation, as in typhoid fever, which is almost universally fatal, and is thought that peritonitis was caused by simple continuity of tissue, and not any actual perforations, and unless P. M. shows perforation not at all certain.

*Exciting causes:*—First, intestinal obstruction and perforation, including syphilitic; second, extension of inflammation from organs, covered by peritoneum, uterus, liver, etc.; third, result of infection, Pyaemia, septicaemia, puerperal fever, etc. Ulceration through stomach by round ulcer, or may be duodenal ulcer, or may be due to rupture of abscesses of liver in which no adhesion has occurred. Impaction of hepatic calculus in common duct may ulcerate through and produce it. Large and too forcible uterine injection has often produced it. Unmistakable occurrence of it during menstruation, which is probably explained by ovule being lost in cavity, or by sudden continuation of inflammation from acute oophoritis. ~~Stabbing~~ wounds of abdomen also may cause it; again contused wound of abdomen has been known to cause it. Abscesses of abdominal wall or psoas abscess may cause it; again, extension of inflammation without perforation by simple continuity of tissue—e. g. from gastritis or uterine inflammation. In some cases it seems to depend on presence of organism, as colon bacillus in perforation. Streptococcus pyogenes when follows uterine trouble, and diplococcus pneumoniae when it follows that disease.

SYMPTOMS—Vary greatly from the acuteness of attack; if from perforation sudden pain is very great, which causes drawing up of the knees to relax the muscles. Increased by slight pressure, or even of bed clothes. Acute pain may be entirely absent in event of intestinal perforation in some



cases. Yet pain is more common. Sudden development of tympanitis, which causes great distension of abdomen. If caused by continuation of inflammation and not perforation, the pain although great gradually increases from mild. If caused by Septicaemia or Pyaemia it is apt to be ushered in by prolonged chill. Knees are drawn up, breathing thoracic; face, as the disease advances, has a drawn pinched look, lips are drawn back, nose pointed, and the eyes deeply set. Tympanitis apt to occur to a great degree only when the inflammation is more or less diffused. Temperature apt to be affected, but no absolute relation between the inflammation; symptoms may be very severe, and temperature only be 101 to 102. Generally is some fever. Pulse always accelerated to 120 to 140 or 150; it is small and corded (that is hard,) and is a more valuable indication than temperature. In fact, in some cases temperature may be sub-normal, in cases where colon bacillus is present and death results before supuration occurs. Pain is severe, sharp, shooting, and stabbing, increased by motion and pressure, no matter how slight, so much so that patient draws up knees, and thus relaxes abdominal muscles, and keeps the bed-clothes off. Often no pain, but in male may have pain along the dorsum of penis, along urethra. Tympanitis is general and greatest when the inflammation is diffuse. Vomiting sometimes is an associated symptom but not always, and when it occurs it indicates that gastric peritoneum is involved and is a grave symptom. Constipation is generally present, urine scanty and of high color, as in any inflammatory disease. *Jaundice* may be present, and is to be regarded as a grave sign, as indicates that hepatic peritoneum is involved, but may occur when inflammation is diffuse and indicates hepatic sepsis. Again, it may be caused by catarrhal obstruction. Diffuse septic peritonitis never occurs idiopathic, but comes from escape of contents of alimentary canal. No absolute typical course; sometimes there is sudden collapse, probably due to shock or perforation. As a rule mind is clear throughout entire course, and at times just before







death, and so it is with other abdominal diseases, but different in thoracic diseases, due to lack of air.

·DIAGNOSIS, *Colic*—Very violent pain and often comes on suddenly, but being pure neurosis there is, first, no rise of temperature; second, pain relieved by pressure, (one of the most important diagnostic signs,) because intestines are distended by gas and there is no inflammation as in peritonitis; third, pulse often undisturbed, not rapid but is full. *Enteritis*. Diarrhoea—in peritonitis there is constipation. In enteritis pulse not so rapid, but full; in peritonitis pulse is rapid and corded. *Enteralgia*—Often severe pain, no fever and some relief by pressure. *Hepatic Colic (Gall Stone)*—sudden in occurrence, in peritonitis pain is comparatively gradual. No temperature or pulse, and pain ceases suddenly when stone passes out; in peritonitis there is a general rise of temperature, pulse quick and corded, pain not so sudden. *Renal Calculus*:—Pain sudden, no fever, pain in region of kidney and shoots down ureter and penis, and there is retraction of testicle.

PROGNOSIS—Always a grave disease, if not from immediate results, from later results, duration generally 4 to 8 days. Sometimes death results in a few hours, as from shock, or in some cases, though rarely, in two weeks. Always liability to involvement of whole peritoneum. Prognosis is especially serious when due to perforation or septic infection; not so grave when due to extension through continuity of tissue.

TREATMENT—Considered many years ago in general bleeding and cathartics, but this not only did no good but probably did harm by weakening patient through drawing of blood, and by the cathartics causing peristalsis. Of late the cathartics have been recommended, as it lessens the congestion of the peritoneum, but this is by no means general. Gynaecologists use them (some of them) with success, but cannot see why they do good in inflammation which results from uterus, and not in other inflammations. When the disease is localized, local abstraction of blood is good, but not

in general inflammation. Alonza Clark revised the use of opium, which no doubt is the most important drug in the disease. He gives powdered opium gr. ij, or morphia half gr. at first by mouth, or hypodermically, and repeats every hour or two until the pain is relieved, and the patient becomes on the verge of narcosis. Give it until the respiratory acts are diminished as low as 12, and if they are reduced as low as five give something to counteract. Large quantity of opium can be stood without passing the danger line. Keep patient under its influence for several days, 2 to 3, as it acts four-fold: first, antiphlogistic; second, lessens peristalsis; third, lessens pain. <sup>4th NERVOUSNESS.</sup> If patient can bear it apply warm flaxseed poultice to abdomen; at first the patient may winch, but will not after once applied. After the symptoms have subsided, keep the bowels constipated for a week, then empty the lower bowel by enema, and then give a mild saline. When the tympanitis is great and does not disappear, it may embarrass breathing; in this case give turpentine spirits gtts. x and apply turpentine stupe, and if this does not relieve give enema of x grs. of asafoetida, or xx grs. of chloral hydrate. If the above does not relieve then an aspirating needle may be inserted in the intestines, and let the air out. Hiccoughs may be severe, and may not only increase pain and make uncomfortable but may tend to increase inflammation; give 10 gtts. pure chloroform shaken well in equal parts of mucilage of acacia and simple syrup. Again, Hydrocyanic acid dilute m 1 to 11, which may prove remedial—does no harm as it is so rapidly diffusible as not to sedate heart much; crushed ice swallowed is often beneficial. Hydrate of chloral is also good, either by mouth or rectum, grs. x to xxx in dr. ii thin starch water. Nourishment should be small quantities of milk frequently repeated.

**Colic.**—In strictness we should give that name to some trouble of colon, but seldom the colon is involved; it is a name given to abdominal pain, and in most cases is pure neurosis, and more likely to be associated with small than large intestines, by wind ~~and causing~~ pressure on nerves,

*Caused*







distension due to neurotic influences over intestinal muscles.

*Lead Colic.*—Probably due to paralysis of intestinal muscles. Often associated with rheumatism, which may be reflexly, or it is probably in some cases due to rheumatic inflammation of intestines.

*Bilious Colic.*—Intense pain, and after symptoms subside there is a large discharge of bile in intestines. But most often comes on from some irritating food, and hence is often seen in children; often due probably to cold feet reflexly by allowing exposure of child's feet. Some parts of intestines are contracted while others are distended with gas. The muscles are, in other words, thrown into irregular spasms, as the term colic indicates. It is not an inflammatory trouble, and pain is relieved by pressure. The term colic is used, depending entirely upon different pathological condition, as kidney, hepatic colic, etc.

CAUSES of true colic are probably reflex in operation, as irritating ingestion, which don't cause inflammation. In those cases of adults when associated with constipation it is reflexly caused. Hernia may cause it, also lead, etc.

PROGNOSIS of simple colic is very good and would subside itself, but is helped by medical interference. In young infant may cause convulsions or death, but this is rare.

TREATMENT—Some stimulating carminative as aromatic spirits of ammonia in teaspoonful doses, tincture of cardamom, etc., and apply warmth to abdomen; the above will generally give relief, but in some very severe attacks will not, and so give hypodermic of morphia. Give fluid extract of senna 1 drm. with morphia; not only relieves pain but relaxes spasm. In other cases when hypodermic is not needed, or in old person where it is objectionable, give 15 to 20 gtts. chloroform in syrup or mucilage of acacia.

**Lead Colic.**—Not so uncommon, but less frequently met with than in former years, because of the process of wet grinding instead of dry grinding of colors, which was done in the time of year when artisans were not painting. Carbonate of lead was inhaled as fine particles, but grinding under water now does away with it. Again, to some extent

carbonate of zinc is used, but this is not so active a cause as it was formerly, because zinc paints are not used so much now. Another active cause is in the drinking water that has flowed through lead pipes; this is not so prolific as was thought, because the water contains protective salts; as  $\text{CaSO}_4$ ,  $\text{MgSO}_4$ , etc., which forms insoluble sulphates which coats pipe and prevents absorption. For this reason water derived from cloud, and allowed to stand in leaden lined cistern becomes rapidly contaminated, because contains no salts. Of two forms lead colic is more common than lead paralysis, in which latter there is "*wrist drop*", but paralysis is not limited to the extensor muscles of forearm. Type-setters often have the troubles, and again, happen to person sleeping in freshly painted apartments—comes by inhalation.

**SYMPTOMS**—Like other forms except symptoms are in aggravated degree; the pain in abdomen is always for a variable time, (several weeks to month), preceded by most obstinate constipation. One important possible result of lead poison in any form, is the possibility of its being the cause of Bright's disease, first acute, then chronic, (Burton's blue line on gums from sulphides, absent when tooth brush is freely used, or when teeth are absent), probably due to fact that kidney attempts to eliminate lead, and in elimination causes congestion of kidney, and unless relieved will cause chronic Bright's. Pain violent excessively, and not intermittent, and calling for medical relief as early as possible.

**TREATMENT**—Indication of treatment: first, relief of constipation; second, relief of pain. Use castor oil, probably best is a tablespoonful repeated in 1 to 2 hours if needed, or 1 dr. of  $\text{MgSO}_4$ . Some say that magnesium sulphate, by forming insoluble sulphate of lead, prevents dissolving of lead in alimentary canal and it is eliminated. KI to produce elimination from tissues. Relieve pain with morphia.

**Hepatic Colic or Gall Stone** has nothing to do with colic. Causes, purely mechanical, found in passage of stone too large to pass through the common, cystic or hepatic duct, and causing reflex straining of duct. As long as stone is in







duct, pain is excruciating, and is suddenly relieved when stone passes into intestines. Cause of stone formation is hard to say, why bile should undergo changes as to undergo inspissation. Stone contains cholates of soda and lime and cholesterine in large amount. Gives rise to no pain as long as in bladder, but sometimes bladder may be so full as to cause ulceration and rupture, but as soon as one enters duct it causes the symptoms. When stone is in duct, bile distends gall bladder. Look carefully in faeces and find stone, and if facets are formed on it there are more in the bladder, but if the surface is round none there. At times when abdomen walls are thin may feel bladder full; they vary in size from pin-head to that of a good sized marble. Not good to use forcible manipulation as it may cause ulceration of gall bladder.

**CAUSES**—Age is predisposing cause after 30 years usually, but may occur at any age. Sedentary habits, hence more common in women; great amount of fatty matter eaten.

**SYMPTOMS**—Pain occurs with great suddenness, not gradually, as in ordinary colic; often referred to as just at region of liver, and seems to extend to left side of abdomen. Often reflected to right shoulder. Pain is of a boring nature not uncommonly seen; attack is brought on by some mechanical action, as in over-eating, which causes increased congestion of liver and forces stone on. Again, jolting as in carriage. Constipation uncommonly present. Length of time pain remains varies with length of time stone remains in duct and shuts up bile; often attacks last for 24 hours. Jaundice also prominent symptom, (one of diagnostic marks,) due to backward pressure and absorption of bile. Some amount of jaundice is always necessarily brought about and persists for several days after attack.

**DIAGNOSIS** at times is difficult, but main points are suddenness of onset and cessation. Again, if lasts for length of time by gentle manipulation find some enlargement of gall bladder, elastic and containing fluid, (bile,) nausea and vomiting and jaundice. Always important to look for stone, as



you get at two important facts, because, first, if not found is simple colic; second, if faceted more exist.

**RENAL COLIC**—Pain in flank and limited to one side, and extends down ureter, and causes retraction of testicles in male; whereas pain from gall stone is in Hypochondriac region, and often extends transversely, and is reflected to shoulder; and renal colic more common in male, Hepatic in female.

**PROGNOSIS**—In most cases will pass on and patient get all right, but in any especially severe case cannot always tell because you do not know how large stone is—often so large that it won't pass and in this case question of laparotomy arises. Death has resulted from ulceration through stone, and death from septic peritonitis. For this reason patient should not be kept under opium too long.

**TREATMENT**—Palliative and Curative. First, *palliative*, Morphia hypodermically for relief of pain. Some recommend chloroform, saying that it dissolves stone, but Chew says that it is not so, and says the good that comes from it is its effect of lessening pain, and spasmodic action of common duct, but hypodermic of morphia is best, and patient nearly always goes to sleep. *Curative*—As to preventing recurrence. Sodium Phosphate 20 to 30 grs. has power of liquefying bile, probably by altering the composition of bile. If it acts too severely as purge, stop for a few days, but must continue for months.

**Hyperaemia of Liver.**—Liver possesses two qualities by which it might become congested; first, large blood supply, and, second, it is very loose in texture, capable of undergoing great increase in size, hence two forms, active and passive.

**ACTIVE HYPERAEMIA** is physiological after a meal and the organ becomes enlarged, and may for several hours extend an inch below margin of ribs. No distension<sup>ENSION</sup> of blood vessels; if this goes too far, as by over-feeding, it may become pathological, not only may quantity but quality of food, as alcoholic, stimulating or spiced food, especially in hot







climates, why we do not know. Often met with in East Indies, and we are told that not only people in that temperature but near residents are particularly prone to use stimulating and spiced food. So that is why abscess occurs so frequently in British India.

**PASSIVE HYPERAEMIA**—Causes are different and due to obstructive troubles of venous system, and the veins are distended. In mitral regurgitation the liver becomes dilated constantly but gradually, and protrudes several inches beyond rib margin.

**CAUSES**, first, obstructive heart trouble; second, Emphysema are the most common causes.

**DIAGNOSIS**, between active and passive. *Active*, undue eating. *P* Cardiac trouble or emphysema. *A* Suddenly develops and patient feels full, often tender. *Passive*, gradually and no fullness, nor pain.

*Diagnosis of Either*—By palpation and percussion. Percussion shows increased liver dullness and it extends below ribs. Normally vertical dullness is about three to three and a-half inches, and may be increased as much as six, but generally in Hyperaemia reaching three and a-half to four inches greater. In active form after meal it will disappear in hour or so, whereas in passive enlargement it is constant, but relieved to slight extent.

*Diagnosis from Abscess*—Sometimes exceedingly difficult when abscess wall is thick and get no fluctuation. Sometimes in small abscess, if near surface, whole organ is enlarged, and at one point of softening surrounded by ridge of hardness due to lymph. *Pleural Effusion*—At times difficult to say whether dullness is due to pleural effusion, pressing down liver, or whether due to enlargement of liver, and only way at times is by introducing and aspirating well, and at times may even get sense of fluctuation below false rib, which you know is also due to abscess. *Cancer*—Enlargement, has not elasticity of liver tissue and is hard, firm and nodulated, but when cancer is deeply seated you at times have to await development which sooner or later brings the



tumor to surface, and the general history aids greatly. Again, in female it is a question if it is enlargement or if it is misplaced from tight lacing. In the latter, although lower down the vertical dullness is not increased, and there is history and marks of tight lacing.

**TREATMENT**—*Active*, take causes into consideration; if he must remain in hot climate; advise to refrain from wind, etc., and restrict all highly seasoned food; lessen the amount of food, and give saline purgatives to relieve tension. Always dangerous if it continues from abscess developing. Cupping is not good. Hepatic Phlebotomy, and also bleeding in tropical climates. *Passive*—More common, and treat the cardiac involvement with digitalis and iron; cannot expect total diminution, but does diminish to some extent. Mechanical purges are given at varying intervals.

**Abscess of Liver.**—*Suppurative Hepatitis*, May be a simple abscess or may be many, up to dozen or more, with varying amount of liver tissue between abscess; may be single and large, or may result from fusion of many small.

**MORBID ANATOMY**—Most frequent seat is posterior part of right lobe. On surface find brown red hue around point, and you find abscess cavity varying in size, containing a yellow flaky pus, which looks as if cornmeal was sprinkled in it. May have blood mingled with pus; bile may be present, and pus has greenish hue.

**CAUSE**—At times seems *idiopathic*; how in such cases it is brought about extremely hard to say. Chew says he thinks that there is some inflammation around in other parts, but other good writers say not. But most commonly it is secondary to other disease. Always pressed <sup>4</sup> ~~active~~ <sup>ENT</sup> active hyperaemia; *Dysentery* most common cause of the disease by the pus products being carried to liver by blood. Not always specific dysentery, but may be simple; in a good many cases have found *amoeba coli* in abscess. Sometimes *amoeba coli* are found in intestine without producing symptoms of dysentery because number are too small, yet liver abscess was caused, and this often explains idiopathic abscess. *Hot Climates* act







as predisposing cause, not only to hyperaemia, but to dysentery also. Again, *pyaemia* often causes abscess, and it is peculiar that quite a number of recently reported cases are associated with injury and suppuration of cranial bones. Again, may follow *enlargement of liver*, of malarial fever. Some authors explain enlargement in malaria to be due to relaxation of veins, and thus passive hyperaemia, no abscess being found, but in hot countries active hyperaemia causes some of them. Ulcer in the intestinal tract, as typhoid from pus being carried into it.

**SYMPTOMS**—Not an uncommon disease in temperate regions, in people who have never been in hot climates. Obscure at first, some fever, progressive chills, and sweats, and elevation of temperature, particularly in evenings, and gradual emaciation, and at first liver is not enlarged and not much tenderness, but later liver enlarges, is tender, and (fluctuation at times,) in some cases no positive diagnosis can be made before death. It may burst in peritoneal cavity, and cause death by peritonitis. Sooner or later have general symptoms of suppurative process localized in liver, dry tongue, sometimes nausea, enlarged liver with pain often extending to right shoulder, often constipation, respiration often suppressed on right side. Diarrhoea alternates with constipation at times, but generally constipation.

**PHYSICAL SIGNS**—*Inspection*: May show bulging in advanced stage, not as valuable as *Palpation*. On *Palpation* you discover bulging in liver area with tenderness on pressure, softening and fluctuation, surrounded by ridges of hardened tissue. *Percussion* increases liver dullness.

**DIAGNOSIS**—*Malaria*: May mistake because have enlargement of liver and chills, and in both copious sweating. If intermittent fever plasmodia is found in blood, and again quinine diagnoses it. *Cancer*—Have nodulated tumor and irregular; history. *Abscess of abdominal wall*, not often easy, but chiefly has patient had ulceration of intestine, cranial bone, or dysentery. Suppurative phlebitis, jaundice, profuse diarrhoea, fluctuation absent in this. *Hydatid*—Have

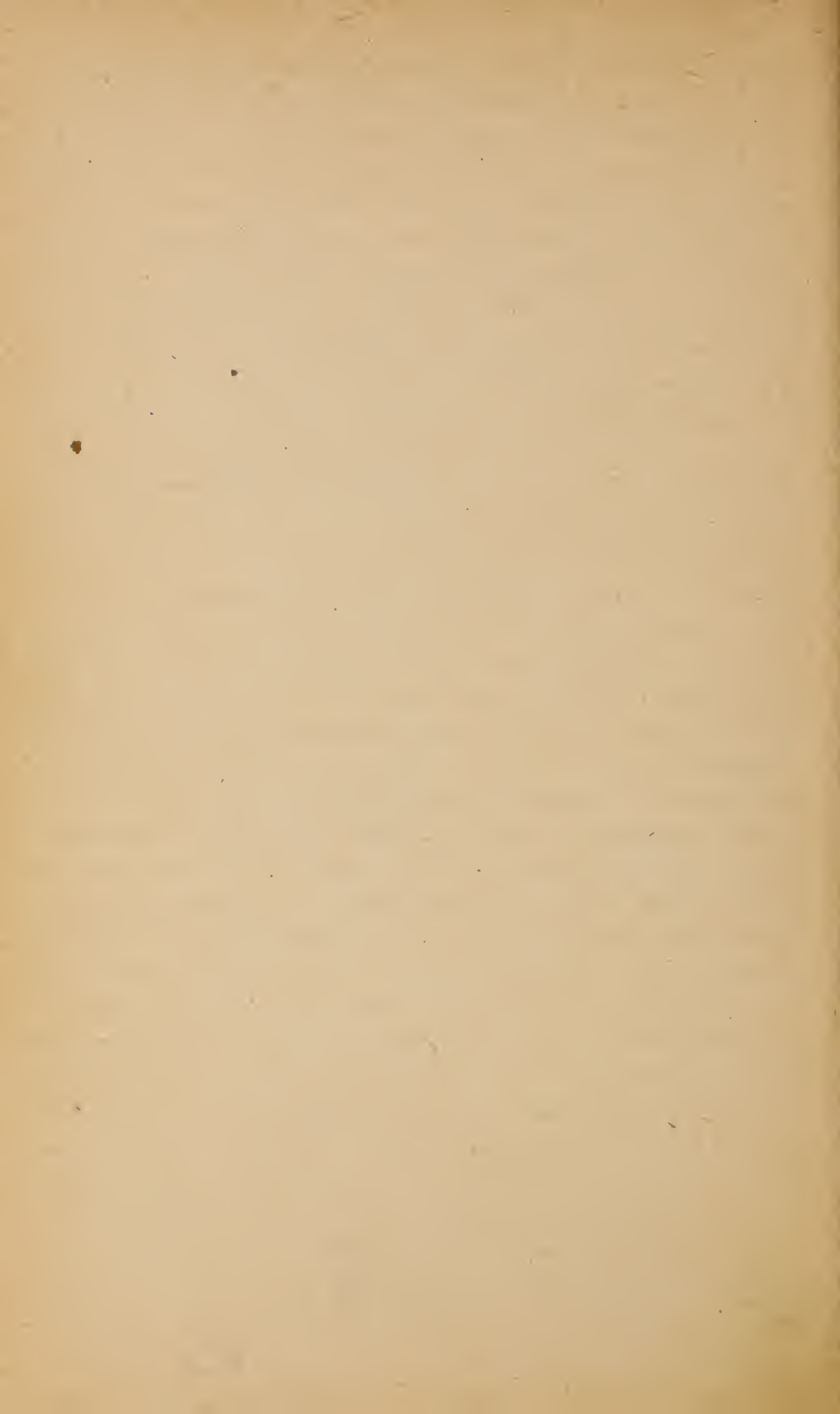
fluctuation, fluid is contained in a tense cyst, which is elastic, peculiar, and gives us peculiar thrill. No fever or chills, but at times hydatids cause formation of pus, and have both, and then P. M. alone will distinguish.

**PROGNOSIS**—Often fatal disease, as surgical interference is often dangerous, and still often cures; operation should be advised, as may recover, whereas it may empty in peritoneal cavity and cause death. Again, it may by lung and liver being adherent to diaphragm rupture into lung, and patient recovers, but so few are the cases like this that better evacuate abscess, but more commonly it only ruptures in the thorax and in peritoneal cavity and causes death.

**Chronic Interstitial Hepatitis** (Cirrhosis of liver,) more frequent than abscess. Cirrhosis has reference etymologically to only one change, and is also applicable to the same change in other organs. Called chronic because in acute stage of interstitial the structure primarily involved is the fibrous tissue investing the blood vessels, (hepatic arteries, portal veins, and bile ducts) called capsule of Glisson, and as a rule when it becomes inflamed it contracts, yet not always. After a time the whole organ becomes smaller. Pressure on portal system leads to damming back, and thus effusions of serum in peritoneal cavity. By pressure on lobules it causes fatty degeneration of the cells, and on section looks rough and the peritoneum also rough, called "hob-nail," or "gin drinker's liver." Substance not only shrinks in volume, but also from atrophy there is diminution in weight at times. The organ sometimes increases in size, owing to the contraction not taking place, and in some cases weighs seven and half to eight (normal 4) pounds. The hypertrophic form is extremely rare, while the atrophic variety is not infrequent. These changes may affect the whole organ at once, but at times we find one part in one condition, atrophic, and the other different, hypertrophic, which leads some pathologists to suppose that hypertrophic is antecedent to atrophic. The atrophic is that form which is followed by ascites, while the other is not. As a rule the







backward pressure causes passive hyperaemia of intestine, stomach, and spleen, which results in catarrh of the two former, and enlargement of the latter.

**Fatty Cirrhosis**, in which, in addition to changes in Glisson's capsule, there is a deposit of fatty matter which makes the organ yellow. Cells undergo fatty degeneration. The change is essentially a cell-multiplication in Glisson's capsule, which increases the size of liver, but later they become organized and contract, causing atrophy and fatty degeneration of hepatic cells, which gives liver yellow color, hence the name, cirrhosis.

**CAUSES**—Most common is *alcohol*; most apt to occur in those who take ardent drink in an undiluted form on empty stomach, when it is rapidly absorbed, and exercises itself on liver with great strength. (First, alcohol; second, syphilis; third, scarlet fever; fourth, highly seasoned food.) Sometimes seems to take place from *highly seasoned food*, spice, etc., especially in hot climates. At times it is thought, not very commonly, that *syphilis* causes it, partly by acting on Glisson capsule, and by deposit of nodule. *Scarlet fever* sometimes brings it about, not very commonly—according to Klein's investigation it does cause it—and this explains those cases which occur in children, and those who never drank spirits, etc. Yet two cases in girls who scraped gin casks are recorded. More common in middle than in early life, as it requires time to develop, and sometimes years are taken to get enough poison in the system to cause it.

**SYMPTOMS**—Often the disease is not suspected until ascites develops; when it does form we can't determine the change if the abdomen is full of fluid, but by emptying abdomen we get diminution in size. In mammary line the size normally in vertical direction is 4, but commonly 2 inches, at times one and half in cirrhosis. At times, before contraction, there is feeling of fullness, and tenderness of liver increases in size, which may be due to simple hyperaemia, but suspect cirrhosis if in alcoholic subject. At this period disease may stop if patient stops drinking; loss of appetite,

and coated tongue in this first stage. Where contraction occurs the circulation is shut off, and ascites develops. The superficial abdominal veins become very much enlarged, vicariously, and for a time will put off the occurrence of the ascites, but by and by contraction is too great and have it. No febrile movement present. Sometimes the liver may be very much shrunken, and still no ascites, which may be due to non-contraction, not pressure on portal veins, but more commonly the superficial veins, or with anastomosis above with internal mammary or Epigastric veins, or below by the inferior mesenteric with the internal Iliac veins. Again the accessory portal circulation of supply becomes enlarged, and will prevent it for a time. Pressure of fluid is at times so great as mechanically to hamper respiration, give rise to gastric derangement, both by back pressure of blood and partly by mechanical pressure. Gastric derangements are of chronic catarrh; viz: feeling of fullness, vomiting occasionally and rarely haematemesis. Constipation alternates with diarrhoea. Jaundice is not a marked symptom. Patient finally dies of inanition, the mind usually being clear to the last, but occasionally wild delirium before death. Again, Oedema of lower extremity, partly by pressure on the vein returning blood from the kidneys mechanically, because when you tap patient the urine is secreted freely, and oedema disappears, as passive congestion is relieved. As a rule dropsy is first in the abdomen, and secondarily in lower extremity, as the kidney is only functionally affected by pressure on veins. Dropsy from cardiac and renal trouble occurs at lower extremity, but kidney dropsy may appear first on eyelid. Stools are clay colored in center, surrounded by pink rings and these by a slaty ring.

DIAGNOSIS—First, from *fatty liver*. Some instances hard to say whether fatty or hypertrophic stage of cirrhosis. In fatty liver there is general obesity, while cirrhosis is associated with emaciation. No ascites in fatty; as a rule sooner or later in cirrhosis have ascites. Second, *Ascites and ovarian Dropsy*—(Cysts.) In female more apt to depend on ova-







ry than liver. Get at early history of case. The history of *ovarian dropsy* is developed tumor on one side or other and gradual enlargement. In cysts we very generally find dullness in flank on side from which cyst grows, resonance on other side, dullness at top of abdomen. In *ascites* have dullness on both sides, and resonance on top. Third, *Full Bladder*, settle with catheter if any doubt. Fourth, *Pregnancy and ascites*, only liable to mistake when Hydramnion, and the ordinary signs will serve to make diagnosis. Fifth, *Cancer*, spleen not enlarged as a rule, if so late in disease. In both after death shows nodulated, yet in cancer the roughness is perceptible through abdominal wall, while cirrhosis not. Cancer liver is enlarged, cirrhosis is small, ascites is rare in cancer, cirrhosis frequent. Sixth, *Ascites from hepatic phlebitis*, usually quick return of ascitic fluid, after tapping more quickly than in cirrhosis. In Hepatic Phlebitis jaundice is marked, and early symptoms, stools semi-fluid and dark brown.

PROGNOSIS—In early stage if it depends on alcohol, to arrest the development stop use of alcohol; and proper medicine, when once contracted, will not cure; ordinary termination in fatal form after development of ascites is about one and half years.

TREATMENT—Total abstinence of the use of alcohol, as it perpetuates the disease; this means those cases when due to alcohol. If due to syphilis, anti-syphilitic treatment may not cure but arrest further progress. *Medicinal*—In early congestive stage, and probably in early contraction, saline purgatives by acting as depletories do good,  $\text{MgSO}_4$ , 1 to 11 drms. twice a day, repeated according to amount of purgation. At least one watery stool every other day should be produced. Certain natural waters, as Bedford water, half tumbler full, before breakfast. Carlsbad water is also good, but probably the natural salt from the water is just as good. No doubt going to Springs is better, because they are under strict rules, and will follow direction, but nevertheless, if they follow same rules at home have just as good results,



dose of Carlsbad salt dr. i to ii. Occasionally Calomel purge does good by its tendency to deplete from the portal vessel in the upper intestinal canal, and probably they act reflexly on liver; whichever be the result is good. Indication for use is some feeling of vascular fullness. Thick coated tongue, constipation and frequent nausea, give dose of calomel, or blue mass, twice weekly, followed in morning by saline. In second stage may do some good, inasmuch as some parts have not gone so far, chloride of gold and sodium one twentieth to one tenth gr. recommended and believed to act as absorptive of the tissue, but Dr. Chew says he believes it absolutely useless in that direction. Much may be done even in this stage, aiding digestion by HCl dr. i, essence of pepsin dr. iii, mix and give one teaspoonful in water, and occasionally purge, even before dropsy occurs. If much flatulence, give one fourth drop of carbolic acid in lime water, or 11 gtts. creosote to dr. i lime water. After Ascites develops use purgatives, which are depreciated by others. Severe purgatives are required, but give dr. i Comp. Jalap powder, about two hours after breakfast; it causes free serous discharges in a few hours. Repetition is to be governed by effect, and often the ascites will disappear to a great extent, and not at times for two weeks. If you find Jalap ceases to be effective, give elaterium in small doses, elaterium gr. one-twelfth, as at times it causes great prostration; also good in large pericardial effusion, or hydrothorax. Always give direction that if depression is marked, give stimulant. At times must give brandy. Best after giving during the day to let patient have quiet night; some give dr. i paregoric at night. If above methods do no good, use trocar in preference to the aspirator, as the circumstances are different from thoracic effusion. Put four-tailed bandage over the ~~pressure~~ abdomen, as it sustains the pressure on the vessel, and thus cardiac exhaustion is done away with. If patient shows sign of depression, stop drawing and cover hole, and bandage tightly. Diuretics are often valuable in this trouble; this is a most valuable prescrip-







tion when urine is diminished. **R** Pulv. Digitalis leaves, pulv. scillae, blue mass,  $\overline{aa}$  gi; ft. pill, give one t. i. d. Not to be continued longer than 4 to 5 days. Sometimes the interference with kidneys is due to pressure on the veins, and often after tapping they secrete freely at times and keep down dropsy for some time, but at times they will not, and then give above pill for a few days, and then if danger of salivation, withdraw the blue mass, and go on with the other ingredients. Fluid is straw-colored, alkaline reaction, under microscope may have epithelial cells. Often causes dropsy of lower extremities by pressure on the iliac veins, which disappear after withdrawal of fluid from peritoneal cavity. Insert trocar midway between the umbilicus and symphysis pubis, being careful that dullness exists at the point, so that the intestine will not be injured.

**Cancer of Liver**—One most common seat of cancer is the liver, it may be primary or secondary. If primary and secondary cancer be taken account of it is the most frequent seat, because not only does it have it primarily but cancer of stomach, uterus, or mammary glands cause secondary growths. It is estimated that one out of a hundred people born die of cancer of liver, but vary this and say that one out of a hundred persons die either with or from cancer. On section the liver is seen to be studded with nodules. Forms are, Scirrhus, Medullary, or Colloid. Scirrhus contains more connective tissue; medullary contains larger development of soft cells. Scirrhus is most often primary, while Medullary is secondary. In Medullary cancer the cells are pigmented. When scirrhus first appears it shows as rounded masses, varying in size from pea to orange, may be near the periphery and raise the peritoneal coat, yet it may be central and not form nodes, but generally before death it usually, but not always, betrays itself. Hence their absence does not make diagnosis negative. In the Scirrhus the whole abdomen may be filled by hard irregular mass of liver, most often occurs in the right lobe, the dullness. You can in some cases make diagnosis without seeing or



questioning patient, but as a rule cannot without questions.

CAUSE—We cannot know what the direct cause is, but as yet the *microbe* theory is not known. *Heredity* has something to do with it. *Age*—Certain predisposition may be said to be connected to a certain period of life, more common after 45, but nevertheless the medullary occurs not very infrequently in childhood—has been known as early as 4 years but scirrhus does occur at times early in life, before 45. *Sex* does not influence, may be secondary to cancer of uterus, ovary, mammae, or stomach. Not infrequently after removal of cancer of the ovary, or uterus, cancer of liver occurs.

SYMPTOMS—In early period impossible to diagnose. Early symptoms are obscure, gradual emaciation, loss of appetite, patient has parchment hue, anaemic doughy look, pain not always acute, but uneasiness is not increased by pressure. As a rule there is some pain, and it may extend to right shoulder. Jaundice later develops. Not always, but at times ascites occurs, but if the pressure on portal vessel is not great do not have it, but jaundice and ascites occur in half cases. The whole organ increases in size gradually, and pressure is so great that at times we have to use bandage to relieve pressure. At times weighs from  $\frac{3-4}{4}$  normal, to fifteen lbs. The enlargement is irregular and nodulated, as disease advances, emaciation becomes more and more, until patient becomes jaundiced and dies either of exhaustion, (generally,) or peritonitis by rupture of the cancer nodule in peritoneal cavity. Duration from the time of occurrence to death is generally 8 to 12 months.

DIAGNOSIS—Scirrhus does not kill as rapidly as medullary; difficult to tell until nodulation is perceptible through abdominal wall. It is more common than some of the diseases with which it may be confused. When the disease is advanced and tuberosities appear, diagnosis is easy. First, from *waxy liver* in which liver is enlarged. 1st, in amyloid liver the surface is smooth, and there is dullness below line of false ribs. Remember in cancer, the surface may also be smooth. *Amyloid liver* is accompanied by some change in







### SYSTEMIC

kidney, as it is a constant disease, and when kidney is affected, you will find albumin in urine. The amyloid disease is accompanied by prolonged suppurative disease or syphilis. Second, From *tight lacing*, although liver is displaced downward, the size of it is not increased. Third, From *Hydatid Disease*. (1) Obscure fluctuation over liver, by placing palm of hand over it and tapping with other hand; not present in cancer. (2) No digestive symptoms. Fourth, From *hepatic abscess*. (1) Get history of case, antecedent dysentery, or other abdominal trouble, but at times diagnosis is almost impossible—time alone will tell.

PROGNOSIS is bad. Duration will depend on force of cancer. If mass be hard, duration will be longer than if soft and fast growing (medullary). Medullary lasts about 2 months; <sup>H</sup>schirrus about 1 year.

TREATMENT—Palliative, cure impossible. Surgery can do nothing. Maintain strength by digestion. Arsenic may do good as it promotes nutrition and so retards; advance continuation of the iron and arsenic. When pain is a prominent symptom use morphia hypodermically, miii, Magendie's gradually increased; constipation or flatulence may be a troublesome symptom, probably due to stoppage of flow of bile. If jaundice is present, relief can be taken from Fel Bouvis or ox-gall, grs. iii to v. It acts by taking the place of the bile. It prevents fermentation and induces peristalsis. Diarrhoea may exist, give astringents and chalk mixture. Ascites may develop in 50 per cent. of cases. Try same measures in ascites from cirrhosis. Always resort to tapping if patient suffers from diarrhoea. *dyspepsia*

**Pylephlebitis or Portal Phlebitis**—An inflammation of portal vein, has been mistaken for abscess of liver, and even for malarial fever. It is really a portal thrombus, from blood coagulating in the portal veins. Two forms: First adhesive P. P., the portal veins become obstructed; Second, *suppurative*, the thrombi become deposits of pus.

MORBID ANATOMY—In adhesive form coagulates occur usually in small vessels, and gradually travel up. The

walls of veins thicken from hyperplasia. The walls adhere together and form a fibrous cord so that blood cannot flow. The liver gets smaller, and the blood going to spleen in large quantity it enlarges.

CAUSE—Malaria, obstruction by means of gall-stone, hemorrhoids, all septic blood conditions, narrowing of portal vein from cicatricial contraction at transverse fissure, and from tumors of surrounding part.

SYMPTOMS—Fluid accumulates rapidly in peritoneal cavity for similar reasons, as in cirrhosis, the inflammation in the veins shutting them up. It is necessary to tap promptly, and in a little while the abdomen is as full as ever. Painful hemorrhoids, spleen rapidly enlarges day by day, due to backward flow of blood, which cannot get into liver. The pressure through gastric and splenic veins of the portal system causes constant vomiting and haematemesis is common. *Copious Diarrhoea* is a characteristic symptom. Sometimes the disease is slow in development, depending on size and number of vessels affected.

DIAGNOSIS—From *Cirrhosis*. Cirrhosis is much more common, and is slower in development, the dropsy form is slow. In portal Phleb. there is rapidity of dropsy. In cirrhosis there is history of alcoholism or syphilis, neither of which are in phlebitis.

PROGNOOSIS—Bad; death may be caused by hemorrhage from stomach, profuse diarrhoea or exhaustion.

TREATMENT is symptomatic; check hemorrhage and diarrhoea; if dyspnoea be urgent, tap.

**Suppurative Form** is associated with hepatic abscess. Scattered through liver will be points of abscess. The veins become involved, but sometimes the phleb. is primary. Liver is large and softened, and there are collections of pus near surface, and in liver substance.

CAUSE—Suppuration, hemorrhoids, etc. Has been traced to a blow on liver, causing a bruise.

SYMPTOMS—Pain, tenderness on pressure, chills, copious sweats, fever 101 to 103. Jaundice, diarrhoea, and exhaus-







tion. Ascites does not occur, as vessels are not occluded, spleen is enlarged.

**DIAGNOSIS**—From *adhesive form*: no pain, no chills or sweats or jaundice. When ascites is present, diagnosis is not so important, as both are fatal. In adhesive form, liver is small. Duration one month; abscess may form in lungs, hair, etc. *Hepatic abscess* no jaundice, constipation alternates with diarrhoea, and have fluctuation.

**TREATMENT** is symptomatic.

**Jaundice or Icterus.**—Is not a disease in itself, but a symptom of some underlying cause; this cause must be removed to cure the jaundice. It is a yellow discoloration of skin and conjunctiva, seen in the latter most marked. Due to circulation of bile, or blood pigment, and its deposition in skin may be due to two classes of causes: first, Hepatogenic, taking its origin in liver; second, Haematogenic, taking its origin in blood.

In HEPATOGENIC the jaundice is due to absorption of bile from some obstruction. Bile ordinarily is forced on by the up and down movement of diaphragm which pushes against gall bladder. In right side pneumonia jaundice is often a common symptom, as in this disease the affected lung is passive, so diaphragm does not move and push bile out, and bile stagnates, is absorbed. Frequently found in catarrhal duodenitis, which is oftenest met with in children. The puffing up of the <sup>mucous</sup> ~~nerve~~ membrane of duodenum prevents bile from coming out. Presence of gall stone is always accompanied or followed by jaundice—of course from mechanical obstruction. An enlarged kidney or any tumor may press on gall duct and so produce jaundice. A small mesenteric gland may press on the common duct and close it absolutely.

**HAEMATOGENIC JAUNDICE**—There may be no obstruction to outflow of bile, and yet jaundice occurs. Probably due to the fact that under certain circumstances the normal bile pigment, instead of being pressed out as pigment, is absorbed with blood. The malaria, especially remittent poison



may cause it, and it is also seen in yellow fever. Snake bites have among other symptoms produced jaundice, chloroform and ether each has produced same result. Sudden development of some emotion has been accompanied by jaundice.

TREATMENT depends on cause. In the Hepatogenic the obstruction most commonly the cause is catarrhal state of duodenum, most frequently seen on pressure. Give mild aperient sodium phosphate; again, if pain is great apply leeches, or usually warm poultice suffices. Again, the jaundices will remain by sluggishness after removal of obstruction. Nitro-muriatic acid does good, probably does it by its oxidizing power, some say by direct action on liver, gtts. xv to xx after each meal in a little water. *Haematogenic jaundice*, the treatment resolves itself to the underlying cause. Locally dr. ii of nitro-muriatic acid to one gallon of water, sponged over hepatic region may give good results.

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## DIABETES MELLITUS.

A disorder of nutrition, in which sugar accumulates in the blood and is excreted in the urine, the daily amount of which is greatly increased.

CAUSES—1, *Age and sex*. Men from 30 to 60 years of age are most subject to the disease. 2, *Heredity*, and it sometimes occurs in many members of same family. 3, *Nervous Troubles*, tumors in the fourth ventricle, injuries about the head or emotional disturbances, worry, severe nervous strain, sometimes cause it. 4, *Race*. Hebrews seem especially prone to it. 5, *Locality*. It is more common in cities than in country districts. More common in Europe than America. 6, *Diseases*. Gout, syphilis, and malaria have been regarded as predisposing causes. It has followed infectious fevers. Diseases of the pancreas cause it. 7, *Pregnancy*. It may set in during pregnancy, and in rare cases may only occur at this period. 8, *Habits*. Intense application to business, together with sedentary life and over-indulgence in food and drink







are prone to induce the disease. 9. *Theoretically*, it may be induced by, 1st, the ingestion of a larger quantity of carbohydrates and peptones than can be "warehoused" in the liver as glycogen, so that part has to pass over into the hepatic blood. Second, disturbances of liver function: (a) Nervous influences may cause changes in the circulation. Thus injuries to the cord, the medulla and brain are followed by glycosuria, because, it is supposed, some of the vaso-motor nerves are paralyzed in consequence of the injury and there is then a more rapid blood-flow. Taking this view the disease is a neurosis. (b) Instability of the glycogen, due either to imperfect formation or to the condition of the cells which render it less stable. 3rd, Defective assimilation of the glucose in the system. How the sugar is utilized normally we do not know, but theoretically faulty metabolism would explain the condition.

MORBID ANATOMY—The *blood* contains sugar, is sometimes thicker than normal and coagulates badly. 2. The *heart* shows no characteristic changes. Endocarditis is rare. 3. The *lungs* nearly always contain tubercle, and gangrene is common. 4. The *liver* is usually enlarged and fatty degeneration is common. 5. The *pancreas* is usually atrophied. 6. The *kidneys* are sometimes fatty and show a hyaline change in the tubular epithelium, particularly in the descending limb of the loop of Henle. 7. The *skin* is dry and boils and carbuncles occur very frequently.

SYMPTOMS—1, The onset is gradual and either frequent micturition or inordinate thirst first attracts attention. 2, *Urinary*. The amount of urine varies from 6 or 8 pints in mild cases to 30 or 40 pints in very severe cases; the specific gravity is high—from 1025 to 1045; and sugar is present in greater or less amount—as much as one or two pounds may be discharged per day; the color is pale, almost like water; has a sweetish odor and a very sweetish taste; the reaction is acid. 3, *Digestive*. Thirst is excessive and most intense an hour or two after meals, and often there is a voracious appetite. Constipation is present as a rule. The tongue is

dry, red, and glazed, and the saliva scanty, and the gums may become swollen and later stomatitis. Patient emaciates in proportion to the polyuria. 4, *Cutaneous*. Boils are frequent, also carbuncles, sometimes eczema and intolerable itching. The skin is dry and harsh usually, but sweats occur when phthisis exists. Drenching sweats have been known to alternate with polyuria. 5, The *Temperature* is often sub-normal; the pulse is quick and the tension increased. 6, *Nervous*. Neuralgia, especially sciatica, is common; headache and lassitude are common, and in the late stages Coma may come on suddenly or be preceded for a short time by delirium. Impotence is common and may be an early symptom.

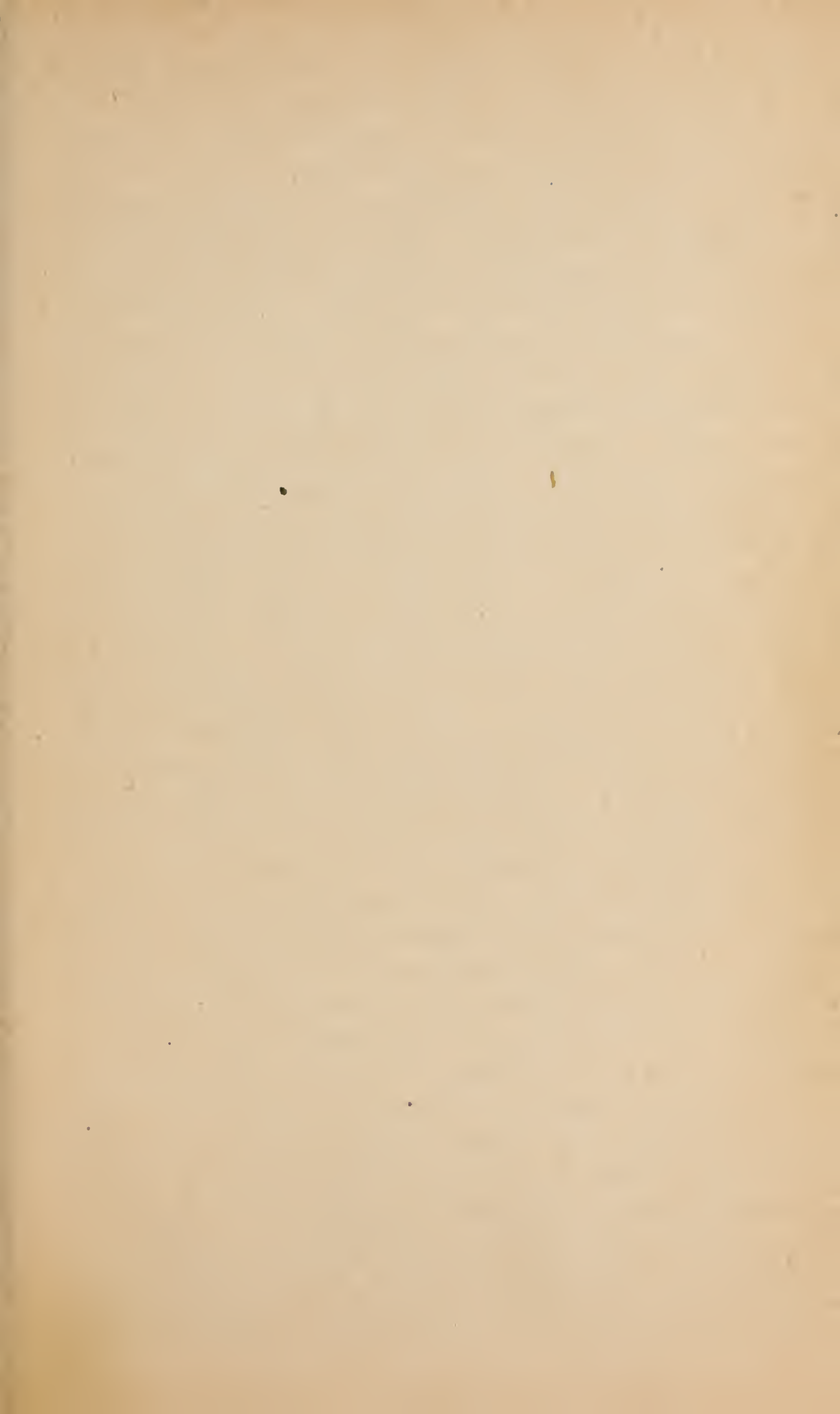
DIAGNOSIS—*Glycosuria* is the only disease with which it can be confounded, and as it is apparently a mild form of diabetes it can be distinguished only by its transient character. Diagnosis is based on the presence of sugar in the urine. *Trommer's Test* is as follows: add to the suspected urine enough liquor potassæ to render it distinctly alkaline, then add a few drops of a solution of cupric sulphate (blue stone) and boil; if sugar be present a yellow or orange-red precipitate of suboxide of copper will be formed. *Fermentation Test* is free from all doubt. Place a small fragment of yeast in a test-tube full of urine, which is then inverted over a glass vessel containing the same fluid. If sugar is present, fermentation goes on with formation of carbon dioxide, which accumulates in the upper part of the tube and gradually expels the urine.

PROGNOSIS—The prognosis is serious and the disease usually progressive, but life may be prolonged for months or years by prudence as to diet.

COMPLICATIONS—I, *Pulmonary*. Phthisis is a very frequent complication; pneumonia and pulmonary gangrene also occur. 2, *Cutaneous*. Boils and carbuncles. 3, *Urinary*. Suppression of urine and uraemia may occur in the late stages. 4, *Ocular*. Cataract occurs sometimes.

TREATMENT—(α) *Prophyllactic*. In families with marked predisposition use of starchy and saccharine articles of diet







should be restricted. (b) *Hygienic*. Sources of worry should be avoided, and patient should lead a quiet, even life, if possible in an equable climate. Flannel or silk should be worn next the skin. A lukewarm, or if robust, a cold bath should be taken every day to promote the skin's action. An occasional Turkish bath is good. Systematic, moderate exercise should be taken and when this cannot be done massage should be given. Surgical operation should be avoided if possible. (c) *Dietetic*. In the words of Sydenham, "let the patient eat food of easy digestion, such as veal, mutton, and the like, and abstain from all sorts of fruit and garden stuff." The following articles of food may be used: 1, *Liquids*. Soups—oxtail, turtle, bouillon and other clear soups. Lemonade, coffee, tea, cocoa, to be taken without sugar but may be sweetened with saccharine. Soda water (without syrups), Appollinaris, Vichy, milk in moderation. 2, *Meats* of all kinds except liver; fish of all sorts except oysters unless their livers are cut out. 3, *Bread* made of bran and gluten of wheat flour, and almond meal. 4, *Butter*. Cream and fat of any kind, buttermilk, curds, eggs. 5, *Vegetables*. Green vegetables as spinach, salads, turnip tops, lettuce, tomatoes, radishes, water cress, cucumbers, celery. Pickles of various sorts. 6, *Fruits*. Lemons, oranges and currants. Nuts are usually allowable. *Saccharine* should be used in place of sugar; one grain will sweeten a cup of tea or coffee. The following articles should be avoided: 1, Thick soups, liver, crabs, lobsters, oysters. *Bread*, as rye, wheaten, brown or white. *All farinaceous preparations*, such as hominy, rice, tapioca, arrowroot, sago, vermicello. *Vegetables*: potatoes, turnips, parsnips, squashes, beets, carrots, corn, asparagus, beans, peas, etc. 2, Beer, all sweet wines, malt liquors, etc. (d) *Medicinal*. (1) Codeia,  $\frac{1}{8}$  to  $\frac{1}{4}$  gr. t. i. d. gradually increased to 6 or 8 grains in the 24 hours—or opium in some form, as morphine. (2) Bromide of Potassium or Bromides of some kinds as they make the blood flow more slowly through the liver by effect upon the vaso-motor system. (3) Arsenic in the early stages, as Arsenious acid or Fowler's Solution 2 to

3 drops "ter die." Arsenite of Bromine. (4) Antipyrin may be given in doses of 10 grs. t. i. d. (5) Salicylic and carbolic acids and their salts and creosote. (6) Lactic acid. (7) Lithium salts. (8) Strychnine, nitroglycerine.

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## DIABETES INSIPIDUS---POLYURIA.

DEFINITION—A disease characterized by the persistent discharge of large quantities of limpid urine of low specific gravity, without the presence of sugar.

HISTORY—First described by Willis who had the circle in brain named for him.

ETIOLOGY—1, *Age and Sex.* More common in males and in early adult life (under 25.) 2, *Injuries and diseases of the nervous system.* Traumatism, sun strokes, tumors in the brain, emotional disturbances if serious and prolonged, copious drinking of water or a drinking-bout, has followed an acute disease. 3, The most reasonable theory is that it results from a vaso-motor disturbance of the renal vessels, due to local irritation (as abdominal tumor), or to central disturbance in case of brain lesion, or to irritation of the centre in the medulla, causing continuous renal congestion.

MORBID ANATOMY—Often there is none. The kidneys and bladder have been found congested and enlarged. Lesions in the nervous system have been met with, sometimes disease of the floor of the 4th ventricle exists.

SYMPTOMS—1, *Urinary.* The quantity of urine is enormously increased—20 to 40 pints in 24 hours. The color is pale and watery. The Sp. gr. is low, 1001 to 1005. Mic-turition is frequent. 2, *Digestive.* Thirst is excessive, and constipation usually exists. The appetite is good usually, and rarely excessive as in diabetes mellitus. The amount of saliva is small and the month usually dry. 3, *Cutaneous.* The skin is dry and harsh, and hard and rough.

DIAGNOSIS—Is based on the urinary symptoms. It is distinguished by a low sp. gr. and absence of sugar from diabetes mellitus. Hysterical polyuria is transitory and hys-







terical manifestations develop. In certain cases of *Bright's disease* there is sometimes passed a large quantity of urine of low sp. gr., but with it albumen, hyaline caste, stiff vessels and hypertrophied left ventricle.

PROGNOSIS AND DURATION—Recovery is rare, but patients may live for years with this disease.

TREATMENT—A.—*Hygienic and Dietetic.* Care should be taken to keep up the general health. No change of diet is necessary except to diminish the amount of liquid ingested as far as possible. B.—*Medicinal*—1, Powdered Valerian root, 5 grs. t. i. d., increased until two drachms are taken in 24 hours, or Valerianate of Zinc in 15 grain doses gradually increased to 30 grs. t.i.d. 2, Ergot or Ergotine in large doses; 3, Opium or codeia; 4, Salicylates; 5, Antipyrin; 6, Arsenic; 7, Strychnine; 8, Turpentine; 9, Bromides. The constant current—one pole on the loins, the other on the nape of the neck.

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## GOUT--PODAGRA.

DEFINITION—A disease characterized by an excess of uric acid in the blood, and by attacks of acute arthritis, and usually by the deposition in old cases of deposits of urates (tophi) in the smaller joints.

ETIOLOGY—Disturbed metabolism; probably defective oxidation of nitrogenous food-stuffs. *Heredity*—In 50 to 60 per cent. of cases the disease is hereditary; more marked from the male side. *Age*—It usually occurs first, especially the *acute* form, between 30 and 40; most commonly 50; but cases with a strong hereditary taint have been known to develop before puberty. The disease has been seen in infants at the breast. *Alcohol* is the most potent factor in the cause. Fermented liquors (ales, beers, wines, and Port wine especially) favor its development more than distilled spirits, and it is most extensive in countries like Europe, particularly Germany. Probably malt liquors induce gout by first causing acid dyspepsia. The light beers of this country are less

liable to produce gout than the heavier English and Scotch ales. *Flood*—Over-eating, especially of meats, disturbs gastric digestion and leads to the formation of lactic and fatty acids. It is held that these decrease the alkalinity of the blood and hence reduce its power of holding urates in solution. Nitrogenous food is chiefly burnt off to form urea in the *liver*, and if this organ cannot do its work properly, *uric acid*, instead of urea, is formed. The formation of urea is a process of *oxidation*, and the more sedentary the life the less active is this process of oxidation. Finally nitrogenous waste is removed chiefly by the kidneys, and uric acid and urate of soda are comparatively insoluble, so if the kidneys are not doing their work properly these substances accumulate in the blood and cause gout. In England poor food, defective hygiene and an excessive consumption of malt liquors makes "poor man's gout" a common affection. *Lead* poisoning renders a person far more liable to gout, probably by interfering in some way with the action of the kidneys. There are three theories with reference to gout. (1) *The uric acid Theory*—Sir Alfred Garrod showed there was an increase in the uric acid in the blood, due to either increased production or to diminished elimination. He attributes the deposition of the urate of soda to the diminished alkalinity of the plasma, which is unable to hold it in solution. (2) *The Nervous Theory* is that gout is due to an affection of the nervous system: (A) a neurosis of the nerve centres, which may be inherited or acquired; (B) "a peculiar incapacity for normal elaboration within the whole body (not merely in the liver or in one or two organs) of food, whereby uric acid is formed at times in excess, or is incapable of being duly transformed into more soluble and less noxious products." (3) *Ebstein's Theory*—A nutritive tissue disturbance is the primary change leading to necrosis, and in the necrotic areas the urates are deposited.

MORBID ANATOMY—I, The *blood* contains uric acid in excess. 2, The *joints*, especially the ankles, knees, and the small joints of the hands and wrists are often enlarged and







the cartilages are infiltrated and covered with urate of soda, which in many cases of long standing forms chalk stones (tophi) around the joints. The first joint of the great toe is most frequently involved. 3, The *Kidneys* are often small, their connective tissue is increased and urates are found in the urinary tubules. 4, The *arteries* show arterio-sclerosis, and the heart is enlarged in consequence.

SYMPTOMS—A.—*Prodromic*. The symptoms which sometimes, (not always) precede an *acute* attack of gout are twinges of pain in small joints, irritability of temper, mental depression, flatulence or other dyspeptic symptoms, and the presence of large quantities of lithiates in the urine. B.—*During an attack of acute gout*. 1, The *onset* is sudden, the attack usually occurring about two o'clock in the morning. 2, *Nervous*—Pain nearly always in one big toe-joint is the most conspicuous nervous symptom. There is great tenderness as well. 3, The *joint* affected is swollen, red and exquisitely sensitive. 4, The *temperature* is elevated,  $102^{\circ}$  to  $103^{\circ}$ . 5, The pulse is full and strong and considerably quickened. 6, The *digestive* symptoms consist in flatulence, heartburn and eructations of gas. 7, The *urine* shows a great *diminution* in the amount of *uric acid* discharged. The duration of such an attack is two or three hours generally, but the joint is left swollen and tender and the attacks are apt to recur every night for ten days or two weeks.

C.—Of *Chronic Gout*. 1, *Tophi*, or deposit of urates, in and around the joints, (chalk stones.) 2, *Cutaneous*—Eczema is a common symptom; it is probably due to the irritation of the skin by uric acid in the course of its elimination by it. 3, *Digestive*—*Gastro-enteritis* is an occasional symptom or form of chronic gout. 4, *Nervous*—*Pertigo*, numbness, headache, *neuralgia*, and other nervous symptoms are common. 5, *Pulmonary*—Bronchitis according to English physicians is common.

SEQUELÆ—1, *Circulatory*. Arterio-sclerosis and hypertrophy of the heart. 2, *Pulmonary*; Asthma is common in the course of gout rather than as a sequel; it is probably due to the irritation of the nerve centres, and possibly of the bron-

chial tubes, by the uric acid retained in blood. 3, *Digestive. Gastro-intestinal* catarrh and jaundice. The former is probably caused by the irritation of the uric acid and the jaundice results from the catarrh.

DIAGNOSIS—It is distinguished from Rheumatism, 1, by the history of acute attacks; 2, the tophi around the joints; 3, the involvement, as a rule, of the smaller joints.

PROGNOSIS—The prognosis is based on, 1, the form of the disease—gastro-intestinal attacks in gout are very dangerous; 2, the age at which it first occurs—the younger the person the worse the prognosis; 3, the complications; 4, the number of joints involved.

TREATMENT—Individuals who have inherited a tendency to gout, or who have shown any manifestations of it, should live temperately, abstain from alcohol, eat moderately, lead an open-air life, with plenty of exercise and regular hours. A warm climate and warm clothing promote the action of skin and lessen the work of the kidneys. The diet should be very scant, especially in nitrogenous, starchy and saccharine food, and rich or highly-seasoned articles; vegetables, especially those containing little starch, milk, bread, and small quantities of meat are advisable. Eggs, oysters and fish may be taken, but lobsters and crabs should not, particularly when made into salads. Sweet fruits, as melons, bananas and strawberries should not be eaten, but acid oranges and lemons may be allowed. Various articles prepared from corn should be avoided. Fat may be taken freely. In obstinate cases an exclusively milk diet is best. Large quantities of water are useful to wash out the kidneys and to keep active the interstitial circulation. Lithia and potash salts are good because urate of lithia or potash is more soluble than either uric acid or urate of soda. Sweet wines and most liquors are injurious; if stimulants are essential, claret, gin, and whiskey are least hurtful. The skin should be kept active; if patient is robust by morning cold bath with friction after it; but if debilitated the evening warm bath should be substituted. An occasional Turkish bath is







advantageous. The bowels should be kept open and an occasional saline purgative may be administered. Opium and Colchicum may be used to relieve pain. During a paroxysm elevate the foot, paint the big toe joint with morphia solution or chloral camphor and then wrap in flannel.

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## ACUTE ARTICULAR RHEUMATISM.

Inflammatory Rheumatism--Rheumatic Fever.

DEFINITION AND FREQUENCY—An acute general disease, characterized by inflammation of one or more of the larger joints and a special tendency to involve the heart. It is of very common occurrence.

ETIOLOGY—1, *Climate*—It prevails in temperate and in humid climates. It is rare in the tropics. 2, *Age*—It is most common between the ages of 15 and 40. 3, *Sex*—If all ages are taken males are oftener affected, but up to the age of 20 females are more prone to the disease. 4, *Occupations* which necessitate exposure to cold and to great changes in temperature predispose. 5, *Heredity* appears to have a special influence. 6, *Impairment of the general health* seems to be a predisposing cause. 7, *The essential cause* is probably the presence of lactic acid in the blood; probably this results from the action of a germ on albuminoid bodies. There are three chief theories: A.—*Metabolic*, is that it is due to a morbid material produced in the system in defective processes of assimilation, and it is thought that this material is lactic acid or certain combinations with it. B.—*The Nervous theory* is that either the nerve-centres are primarily affected by cold and the local lesions are trophic in character, or the primary nervous disturbance leads to errors in metabolism whereby lactic acid is formed. C.—*Germ Theory*: the arthrititis is due to a specific microbe.

MORBID ANATOMY—1, The joints are swollen, the synovial membranes somewhat reddened and there is a serous effusion or exudate into the affected joints. 2, The blood contains lactic acid and fibrin factors in excess.

SYMPTOMS—A.—*Premunitory*. 1, Sore throat, tonsillitis, slight malaise, and irregular pains in the joints. 2, Occasional digestive disturbances occur, as cholera morbus. B.—*Of the developed attack*: 1, The tongue is moist, and rapidly becomes covered with a white fur. There is loss of appetite, thirst, constipation, acid dyspepsia. 2, The urine is apt to be excessively acid and rarely it contains albumin; it is scanty and highly colored and of high sp. gr.; on cooling deposits urates; chlorides may be diminished or absent; saliva may become acid. 3, *Cutaneous*. Acid sweats occur in almost all cases and at frequent intervals. 4, *Nervous*. Pain in the joints, headache, and occasionally violent delirium. 5, *Circulatory*. The pulse is quick and often jerky. 6, The temperature is elevated, usually from  $103^{\circ}$  to  $105^{\circ}$  but it may reach  $110^{\circ}$ , very irregular. 7, The *Joints*. One or more of the large joints are involved and frequently the disease may suddenly disappear from one joint and appear in another. They are swollen, excessively tender and painful on movement and somewhat red.

## SUB-ACUTE RHEUMATISM

Represents a milder form of the disease in which all the symptoms are less pronounced. The fever rarely rises above  $101^{\circ}$ ; fewer joints are involved, and the arthritis is less intense.

COMPLICATIONS—1, Cardiac Endocarditis occurs in about one-third of the cases and pericarditis nearly as often. They are due to the morbid matters in the blood. 2, *Nervous*. Delirium has been mentioned, but it is sometimes a serious complication (cerebral rheumatism.)

SEQUELAE—1, Valvular disease of the heart is the most common and most serious. 2, Chorea occurs as a sequel in many cases. 3, Chronic inflammation of the joints is rare.

DIAGNOSIS—1, From pyaemia it is distinguished by the history of the case and the more severe constitutional disturbance in pyaemia. 2, From simple synovitis by the fact







that in synovitis but one joint is usually involved and there is no acid sweat. 3, Gout never occurs under 40 years and it attacks the smaller joints. 4, Hysterical knee-joint.

PROGNOSIS—The disease is rarely fatal, the mortality being about three per cent. It is dangerous from the results (valvular disease.) *Duration*—The usual duration is from 3 to 6 weeks, but mild cases may terminate in a day or two.

TREATMENT—A.—*Hygienic*. The bed should have a smooth, soft, elastic mattress. The room should be large and airy. The clothing should be warm (flannel.) The diet should be light and unstimulating; milk, broths, oatmeal, lemonade, meats sparingly, alkaline mineral waters. B.—*Medicinal*. The indications are, 1st, To relieve pain and shorten the disease; 2nd, To prevent cardiac complications. 1, To relieve pain, salicylic acid or salicylate of soda, 20 grs. every 4 hours, alternating with bicarbonate of soda or bicarbonate of potassa, is by far the best drug. It rarely shortens the disease and it does not prevent cardiac complications. Salol has a very similar effect. Phenacetine is less useful. Oil of Wintergreen has the same effect as salicylic acid; morphia or codeia may be given but are seldom necessary. Locally hot cloths may be applied, saturated with Fuller's lotion (carbonate of soda, 6 drachms; laudanum, 1 ounce; glycerine, 2 ounces, water 9 ounces.) Tincture of aconite and chloroform liniment are also good. Fixation of the joints is of service in allaying pain. Wrapping the affected joint in cotton batting often does good. Ice bags are much used in Germany. 2, To prevent cardiac complications the alkalies, as bicarbonate of potassium in 30 gr. doses every 3 or 4 hours until urine is alkaline. Fuller was in the habit of ordering a drachm and a half of sodium bicarbonate with half a drachm of potassium acetate in 3 oz. of water, rendered effervescent at the time of administration by half a drachm of citric acid or an ounce of lemon juice. If given every 3 or 4 hours the urine usually becomes alkaline when the dose is diminished; keep the urine alkaline, so regulate the dose accordingly. Care should be taken to watch the heart dur-

ing the administration of these remedies, and rest in bed for a time after apparent recovery should be insisted upon.

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## CHRONIC ARTICULAR RHEUMATISM.

ETIOLOGY—It may follow an acute or sub-acute attack, but more commonly it comes on insidiously in elderly people. It seems to be hereditary and exposure to cold and dampness is an exciting cause.

MORBID ANATOMY—The joints are somewhat swollen and the synovial sack and sheaths of the tendons are thickened.

SYMPTOMS—The joints are stiff and painful; the pain being usually dull and aching in character. The knees, ankles and wrists are usually involved.

DIAGNOSIS—It is diagnosed from rheumatic arthritis by the fact that the large joints are almost exclusively involved in this form, and the disease is far less severe than rheumatoid arthritis.

PROGNOSIS—The prognosis as to life is good; as to perfect recovery is bad.

TREATMENT—The indications are, 1st, to relieve pain; 2nd, to relieve stiffness and reduce inflammation; 3rd, to build up the general health. 1, To *relieve pain* counter irritants, and anodyne applications are useful as “firing” with the Paquelin cautery, &c., wrapping the joint in cold cloths, covered with a thin blanket and then oil silk. 2, *Stiffness and inflammation* are benefitted by massage, electricity and iodide of potassium. 3, Cod liver oil and iron often useful, hot baths, Turkish baths, residence at the Hot Springs of Virginia or Arkansas, &c. Rich patients should always winter in the South, and thus avoid the cold damp weather.

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## MYALGIA,

(TORTICOLLIS, MUSCULAR RHEUMATISM)

Is an affection of certain muscles or groups of muscles, characterized by pain and stiffness.





easily. The Teeth may become loose and even fall out. Necrosis of jaw sometimes occurs. The Breath is foul. The Tongue is swollen; may be red but not furred. The Salivary Glands are occasionally enlarged. The Skin becomes dry and rough; ecchymoses soon appear, first on the legs and then on the arms and trunk. The slightest injury causes hemorrhage into the injured part. Epistaxis is common, but haemoptysis and haematemeses are rare. The Heart is feeble and irregular. The Appetite is impaired, and soreness of gums prevents chewing food. The Urine is often albuminous, sp. gr. high, color deeper, phosphates are increased. Pain in the back and limbs, mental depression, indifference, in some cases headache and delirium. The Temperature is usually below normal. Constipation is usual.

DIAGNOSIS—I, From *mercurial stomatitis* it is distinguished by the presence of hemorrhagic extravasations in scurvy, and by the history in the case. 2, From *purpura* by absence of swelling, &c., of gums in purpura, and circumstances under which the disease develops.

PROGNOSIS is good. Death is due to heart-failure, but seldom occurs now.

TREATMENT—A.—*Dietetic*. Fresh vegetables and lime and lemon juice are preventive and curative. B.—*Medicinal*. Build up general health by tonics, such as quinine, iron, quassia, etc. Mouth-wash of permanganate of potash, or dilute carbolic acid, or chlorate of potash, borax, etc. Solution of nitrate of silver painted on gums. For constipation use enemata. For hemorrhages, ulcerations, &c., use suitable measures.

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## PURPURA.

DEFINITION—A disease characterized by either extravasations of blood in the skin and mucous membranes or by hemorrhages from various mucous membranes.

VARIETIES—Hemorrhagic and Rheumatic. *L. Simplex*

ETIOLOGY—The causes are practically unknown. The







disease sometimes follows rheumatism, diphtheria, scarlet fever, measles, small-pox, etc.

MORBID ANATOMY—*Extravasations of blood in the skin and mucous membrane* are the only morbid appearances in many cases. Small extravasations are but little elevated, but large ones, two or three inches in diameter, are elevated.

SYMPTOMS—A.—*Prodromic*. Occasionally there is a feeling of lassitude and depression before the purpuric spots appear; often there are no prodromata. B.—After the spots appear they, or *hemorrhages*, are usually the only symptoms. *Pallor* and other symptoms of anaemia result from loss of blood. *Pain* may occur from distension of the tissues at the seat of extravasation.

DIAGNOSIS—It is distinguished from *scurvy* by the absence of swelling of the gums and of serious constitutional disturbance in the early stages in purpura. In scurvy patient has a sallow complexion, in purpura there is pallor. In purpura the spots are brighter red than in scurvy.

PROGNOSIS—In the *simple form* it is good; in the hemorrhagic form it is serious. The duration in simple cases is rarely more than a few weeks; in the hemorrhagic form it may be fatal in a few weeks or may last much longer.

TREATMENT—A.—*Hygienic*. Rest, fresh air, and nutritious food. B.—*Medicinal*. Arsenic in full doses, push Fowler's solution until physiological effects are obtained. *Iron* to improve the character of the blood and the nutrition of the walls of the vessels. Use the tincture or Liq. Ferri Nit-ratis gtt. x. Aromatic Sulphuric Acid, ergot, turpentine, and gallic acid to control hemorrhage. Rockbridge Alum Water. Claret and other sour wines.

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## HAEMOPHILIA.

A constitutional tendency to bleed profusely from slight injuries, abrasions, or spontaneously. Persons having such tendency are called "bleeders."

CAUSES—I, *Sex*. Males are more liable to the affection

than females 12 to 1; the tendency usually develops in the first few years of life. 2, *Heredity*. The transmission is through the mother and not the father. *Singularities*. A bleeder marries and his children are not bleeders, but his daughters marry and give birth to haemophilic male children. "Bleeders" are particularly prolific and look to be very healthy. Females of such families do not have copious menstrual flow, nor do they have profuse post-partal hemorrhage. Women in bleeder families ought not to marry as they transmit the tendency.

**MORBID ANATOMY**—No characteristic morbid anatomy—there is little known of it—we do not know if vessel walls are thin, if fibrin of blood is lessened. Extravasations of blood in the joints, especially the knee joints, is frequent however, and they are swollen, sore to the touch, tender, &c.

**SYMPTOMS**—*Hemorrhage* from slight injuries, which is profuse and uncontrollable; a pin scratch will cause profuse bleeding, vaccination also, and leeching. Hemorrhages are frequent from nose, mouth, lungs, urinary tract, bowels, &c.

**TREATMENT** is preventive. Ice. Pack nostril with cotton or shreds saturated with solution of alum. Ergot internally. Arsenic to improve nutrition. Iron to improve anaemia.

## LEUKAEMIA--LEUCOCYTHAEMIA.

**DEFINITION**—A disease characterized by a persistent increase in the number of white corpuscles in the blood and by enlargement of the spleen, or lymph glands, or both; sometimes there is enlargement of the bone-marrow.

**VARIETIES**—Splenic, Lymphatic, and Myelogenic.


**CAUSES**—Causes are practically unknown. *Sex*—Males are more prone to the affection. In women at the climacteric. *Age*—most common in middle life—cases are recorded as early as the 8th or 10th week, and it may occur in the 70th year.

**MORBID ANATOMY**—The *blood* shows a great increase in the number of white corpuscles, the proportion to the red




Erythrocyte = normal red blood cell

Polycythemia = change in  
shape of red blood cells

Blood plaques or thrombocytes are  
smaller speck-like spots floating in  
the blood.

~~Leukocytes~~  
Eosinophils   
Transitional  
Mononuclear  
Poly nuclear

There are 6% Polynuclears in 100  
white corpuscles

1. The Mononuclear 
2. The Transitional-form 
3. Poly nuclear 







being 1 to 60, 1 to 20, 1 to 5, or even 1 to 1, the number of white corpuscles may exceed the red, (normally the proportion is 1 white to about 350, up to 1000 red.) 2, The *spleen* is usually enlarged to a greater or less extent, it may be very greatly, the enlargement being usually due to a simple increase in its normal constituents; but in old cases the amount of connective (fibrous) tissue is increased. Often it is diagnosed for malaria. 3, The *lymph glands* frequently undergo a similar change, thus the cervical, axillary, inguinal and mesenteric. 4, In the *myelogenic* form there are false white cells (myelocytes) in the blood.

SYMPTOMS—1, *Circulatory*. The blood changes have been described. The pulse is weak. Hemorrhages sometimes occur, as into the skin, epistaxis, etc. The spleen and lymph-glands are enlarged. 2nd, The skin is pale. 3rd, the temperature is usually normal till the latter stages of the disease, and then there are irregular elevations,  $102^{\circ}$  or  $102.5^{\circ}$ . Fourth, the general symptoms are loss of strength and vigor; there is usually no emaciation.

DIAGNOSIS is based on a microscopic examination of the blood.

PROGNOSIS extremely bad; after alteration in the blood death usually occurs from exhaustion in from three months to three years; or may have hypostatic pneumonia, oedema of lungs, albumin in urine.

TREATMENT—Fresh air, good diet, and abstention from mental worry and care. Arsenic has given better results than any other remedy. Ergot, which prevents hemorrhage, diminishes spleen by contraction of blood vessels. Oxygen inhalations have been tried recently with good results. Quinine and iron are useless unless there is history of malaria. Transfusion of blood has been tried without success. Removal of spleen may prolong life a little.

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## HODGKIN'S DISEASE, (PSEUDO-LEUKAEMIA. LYMPHADENOMA.)

DEFINITION—A disease characterized by progressive enlargement of the glands in different parts of the body, without increase of white blood corpuscles and by great anaemia.

ETIOLOGY—The *causes* are unknown. The majority of cases are in *young* persons, and in *males*.

MORBID ANATOMY—The lymphatic glands in the neck, axilla, groin, thorax, and abdomen are greatly enlarged, hard, and occasionally caseous. Their connective tissue is increased. 2, The *spleen* undergoes a similar change. 3, Adenoid growths in the liver, kidneys, lungs, &c.

SYMPTOMS—*General*. Progressive loss of strength and sometimes flesh. 2, *Glandular*. The glands are enlarged as already stated. 3, *Circulatory*. The pulse is soft and feeble and hemorrhages sometimes occur. 4, *Temperature*. There are irregular elevations of temperature in the late stages. 5, *Digestive*. Nausea and vomiting are frequent.

DIAGNOSIS is based on (1) the glandular swelling; (2) the absence of any increase of white corpuscles in the blood.

PROGNOSIS—The disease usually terminates in death; the duration is about a year.

TREATMENT—*Arsenic* internally and injected into the growths is said to have given good results. *Phosphorus* is advised. Quinine, iron, and cod-liver oil are useless except as tonics. Strychnine is a good heart stimulant. Excision of the glands has been tried and seldom if ever is of service.

## ADDISON'S DISEASE.

Is a chronic disease, characterized by a bronze color of the skin and usually by disease of the supra-renal capsules.

CAUSES—1, It is most common in young men or men of middle life. 2, The bacilli tuberculosis are considered the cause by many who hold that the disease is tuberculosis of the supra-renal capsules.







MORBID ANATOMY—1, The Skin is a bronze color, especially in the face, hands, and places which are subjected to pressure and in situations where there is naturally much pigment. 2, The Supra-renal Capsules are usually diseased; they may be caseous or have undergone “fibroid degeneration.” 3, The Spleen is somewhat enlarged in many cases and the Lymph Glands and Peyer’s patches also. 4, The semi-lunar Ganglion shows degeneration and pigmentation of its cells.

SYMPTOMS—1, *General*—The onset is gradual; there is no emaciation, but a gradual loss of strength, with intervals, however, of apparent improvement. 2, The *nervous* symptoms are depression, lassitude and hypochondria. 3, The *digestive* disturbances are nausea and vomiting, and there is loss of appetite. 4, *Circulatory*—The pulse is weak and compressible and faintness may occur on exertion. 5, The *temperature* is usually normal, but there may be occasional elevations. 6, The *bronze color of the skin* is the most striking symptom.

DIAGNOSIS—It is distinguished from Jaundice by the absence of discoloration of the sclerotic.

PROGNOSIS is bad, and the duration usually about eighteen months.

TREATMENT thus far has been useless.

## DISEASES OF THE KIDNEY.

**Bright’s Disease.**—Tubular Nephritis, acute and chronic Interstitial Nephritis, (chronic); Amyloid Disease. Most important group from medical point is Bright’s disease, so called because Dr. Bright was the first who wrote on them, and he thought that all were the different stages of same trouble, but now we know that they are entitled to different names. He held in 1827 the above fact, and although we know that he did not teach the full truth, he is due the honor of having laid the foundation for others to build on. Diseases are distinct in their origin, causes, and modes of

beginning, but all persons affected, whether with one or the other disease, have albumin in urine, and dropsy, both of which vary greatly in the amounts present. Long before Bright, Blackhall pointed out that albumin was found in urine in certain forms of dropsy, but he did not point the same out as the cause. Confusion in nomenclature in regard to name: There are three distinct forms under this name differing in cause, progress, and to a certain degree in their symptoms and complication, and parts primarily affected. There are three pathological elements of kidney, in which the disease may occur in one or mixed, but by careful study the physician can decide which was first affected, and one most affected.

ELEMENTS—First, uriniferous tubules; second, interstitial connective tissue; third, blood vessels. Hence in accordance with these elements we may group the disease in tubular acute or chronic; it may begin as acute and clear up, and recovery or death, or it may become chronic, yet can't begin as chronic. Again *interstitial* or cirrhosis of kidney, is always chronic. Amyloid Disease is chronic degenerative disease, beginning for its origin in blood vessel.

**Acute Tubular Nephritis.**—Sometimes it is acute congestion or Bright's disease, (parenchymatous).

MORBID ANATOMY—Organs are always enlarged, the surface is smooth, having mottled appearance, capsule not adherent but is easily peeled off. On section the cortical portion is relatively more increased, dotted all over with red points, they being the parts chiefly congested. Epithelium of tubes is swollen and more granular, many cells are detached and filling tubules, which may contain fibrin, coagulated hyaline caused by blood passing in tube from intense congestion, and at times blood. Medullary portion of kidney will be darker than normal, and at times will be streaked with red; while the latter being the changed tubules, the former the congested inter-tubular tissue. Congestion is most marked at the junction of the medullary and cortical portions.







ETIOLOGY—Most common is exposure to *cold and wet*, as there is vicarious action between skin and kidney, as in cold weather when skin acts less freely more urine is passed, and on the contrary less urine in hot weather. This is physiological and when there is too great failure of action of skin it throws more work on kidneys. *Alcohol* has been regarded as cause, this is rather questionable, as it more often causes interstitial. *Copaiva*, turpentine or cantharidis may act directly, but probably alcohol acts indirectly by causing drunkard to lay out in the cold. Another cause is presence of some *morbid agents in the blood*—e. g., scarlet fever is not an uncommon cause; some hold that it causes it by its action on skin; probably it does it by direct action in being eliminated by kidney, because in some very mild cases the kidney is involved. *Diphtheria* is very frequently accompanied with the disease, again *yellow fever*, *measles*, and *typhoid fever*. Again, certain *medicinal substances*, which are eliminated by kidneys, as above named. Again, certain *metallic agents*, lead poison, also arsenic. In giving arsenic look carefully to kidneys, and when there is slight puffiness of lids, stop, or better stop every two weeks for one week, as then no danger of involving kidneys. Test urine when oedema of lids occurs. *Pregnancy* causes it; some say it is due to pressure on veins and passive congestion; this is probably not true. Again, some say it is due to over-amount of *excrementitious matter* to be eliminated, but this probably is not true, because nature does her work better than this. If it occurs in pregnancy it is more apt in fifth month. Further investigations are needed because we know not the cause, but clinically we know certain conditions occur which favor its happening.

SYMPTOMS—One of the earliest is oedema of face; this may be small, but again may give way to general anasarca; first in eyelids, then feet. Headache generally increasing, restlessness, temperature rises, may go up to 101 to 103, pulse accelerated, pain in back and loins, and tenderness. Urine is small, highly colored. If case is going to recover urine increases in amount and color returns to normal, an-

asarca disappears, temperature goes down, etc. Skin usually is dry; nausea and vomiting are not infrequent, in fact they may cause the Doctor to think they are due to stomach trouble. In mild cases may not be so severe, and may recover in few days. In severe cases may go on and become worse, and may have oedema of lungs and die by drowning. Again, Uremia may occur, giving rise to coma, convulsions, and death, and this is why death occurs when the disease is not amenable to treatment.

URINE—Special symptoms which also apply to other forms: First, urine, in Acute Bright's, is small in amount, highly colored, often smoky, due to presence of blood; it may be due to sparseness of red corpuscles, because when great they give red color. Sp. gr. apt to be high, 1030, which cannot in all cases be attributed to albumin, but although the quantity of water is so small ~~the~~ proportion of solids is greater, also water in less quantity. Microscope often shows presence of blood, amount of urea always is reduced, and varies in inverted proportion to the intensity of the inflammation, and may fall as low as half normal (which is about 500 grains in 24 hours). Albumin is always present, and also varies in amount with the intensity of the inflammation. *Tests*—Ordinarily heat and nitric acid are sufficient in greatest number of cases, but in other cases, especially the other forms, may have to look to other modes. Heat coagulates albumin below the boiling point, but if urine is alkaline or neutral it may cause cloudy appearance of phosphates, which is dissolved by 1 gtt. of  $\text{HNO}_3$  but if  $\text{HNO}_3$  forms a cloud of its own you may be sure that it is albumin. If urine is highly alkaline, and incoagulable, it is advisable to add an acid which will not coagulate—e. g., acetic acid. *Heller's test* is good; pour  $\text{HNO}_3$  in test tube, then add slowly by pipette 2 or 3 times the amount of urine, and at line of junction a whitish opaque ring will be formed. Brownish ring and transparent, and is due to reaction of  $\text{HNO}_3$  and urates, and should not be mistaken. Microscopic examination shows casts invariably in acute form. They









are epithelial in character, and hyaline, viz.: Fibrinous and fibrinous with epithelial cells upon them. The former are fibrinous, the latter epithelial. If the trouble continues for any length of time, the epithelial cells undergo a granular degeneration, and form granular casts. Blood-casts often occur in acute nephritis. In chronic cases fatty casts may be found. *Dropsy* occurs early. The explanation is not clear. First, it may be due in some cases to the blood being robbed of its albumin; this will not hold good in all cases, as at times there is suppression of urine with great dropsy; second, it may be due to hydraemic condition of blood, and again kidneys may pass great deal of fluid, and the dropsy present to some extent is less in amount; third, anaemia often occurs without dropsy.

**NERVOUS SYMPTOMS**—The nervous symptoms are extremely important. They are due to the retention of the excrementitious materials of urine in the blood. Gull and Sutton in their elaborate investigations came to the conclusion that the neurotic symptoms were due to oedematous condition of the brain. This does not explain convulsion, but stupor and coma. Trayrick held that Urea  $(\text{NH}_2)_2\text{CO}_3$  in the blood caused the symptoms. Dr. Bright thought that it was due to retained urea. Dr. Chew thinks that this may be true. The symptoms have been called *uremia*; they are headache, nausea and vomiting, sometimes coma, sometimes convulsions. The headache is sometimes severe, sometimes slight, and it may occur through the whole course of the trouble. Nausea is at times prominent, and not relievable by the ordinary remedies addressed to stomach for nausea. Convulsions often precede coma. This may pass into death. It has been held that convulsions are due to the *Materies Morbi* acting on the whole nervous system, while coma is due to cerebral oedema. Dr. Chew does not believe this, but he thinks that it is due to either the retention of urea, or some of its derivatives. He says that the reason urea does not cause convulsion when injected into the well animal is because the healthy kidney excretes it rapidly.

DIAGNOSIS—Made from the diminution in amount of urine, albumin in urine, dropsy, and fever. These symptoms are always present. Blood-casts may be found.

PROGNOSIS—The prognosis is very often good, yet there is danger from liability to suppression of urine, coma, or pericardial effusion, or pulmonary oedema, or endocarditis, or valvular disease. The trouble may end in chronic nephritis. This often happens in scarlet fever.

TREATMENT—One of the most important methods is local cuppings over region of kidney. This often gives most excellent effects by lessening congestion of kidneys. Blood-letting is open to objection, it favors subsequent dropsy. If patient's condition is not good, dry cup may be used instead of wet cups. This should be used when fever is high, and there is much tenderness over kidney. The hot-air bath is very efficacious. Saturate cotton with alcohol and ignite it, leading the air to patient under cover by means of a stove pipe. This acts revulsively by drawing the blood to the surface, and produces profuse diaphoresis, often acting marvelously; put rubber cloth under patient. Urea is eliminated by sweat. Often after the bath the kidneys again act vigorously, excreting large amounts of urine, which has light sp. gr., and dropsy disappears rapidly. During convulsions keep moist skin; give milk and no meat; keep patient wrapped and avoid exposure. Pilacarpine muriate gr. one-eighth hypodermically is often given with good effect, but it is sometimes uncertain. It often unduly sedates the heart, also produces salivation, and has caused copious bronchorrhoea. The blocking up of the uriniferous tubules by epithelium is best removed by infusion of digitalis, dessert-spoonful every third hour. It causes freer circulation through the kidneys without irritating them. Infusion is better than the tinct. digitalis. When heart beat is as low as 60 per minute stop its use. Opium was thought to increase condition of nervous system, which caused convulsions, but this is not so, nor is it so that they diminish action of kidneys, but the slowness of evacuation is due to action









on accelerator urinae muscles. The effects of the toxic element upon the kidneys must be combatted. If convulsions are actively present, use morphia  $\frac{1}{4}$  to  $\frac{1}{8}$  gr. (hypodermically;) may be repeated as needed. Let patient inhale little chloroform, but effect is only transitory. If coma be present not advisable to use morphia; use hot air. *Indications:* First, eliminate urea; second, remove products which block tubules; third, counteract effects on nervous system. (Parenchymatous.)

**Chronic Tubular Nephritis.**—May result from acute, or be and usually is chronic from the beginning. May result from acute form which follows scarlet fever, and patient apparently has gotten over it, but every time you test urine find albumin.

**MORBID ANATOMY**—Gross changes are usually well marked and seen in several forms, and the question is whether there are different forms from the first, or whether there are three stages of the same disease. 1, *Large Fatty Kidney:* Kidney is larger, capsule is easily removed, paler than natural, has a yellowish color. The organs have greasy feeling to the hands. On section cortical portion seems to be chiefly enlarged. Tubules seem filled with fatty granules, some in cells, and others not in cells. 2, *Large White Kidney,* looks like above, but not greasy. Large capsule is easily stripped off. Tubules are loaded with cells, which are granular, and have not undergone fatty degeneration. The question is, if patient had large white kidney long enough, would it become the large fatty kidney? The difference between the two forms is that in large fatty we have fatty matter in tubules, and none in the large white. It is probable that they are independent of one another, but it has not yet been definitely proven. 3, *Small Granular Kidney:* The organs are smaller than normal, shrunken tubules are collapsed. Small granular kidney is probably an advanced stage of either of the former, and probably is due to the great quantity of epithelium thrown off. Some think that may be such from beginning. No marked presence of fat and epithelium

which has almost if not entirely disappeared. Capsule is finally adherent, and hard and thick.

**ETIOLOGY**—Sometimes follow acute, very often, however, are chronic from the first; more common in males because they are exposed more, or drink more alcohol. Again, may follow other diseases—e. g., Phthisis, Emphysema, Heart troubles, probably due to more or less backward pressure. When diffuse is likely to have this form gradually supervening by backward pressure. In chronic cardiac disease often have tubular nephritis as one of its advanced symptoms. Sometimes cannot detect the cause after the most careful search, as patient may be temperate, not exposed, nor have had any other disease. Whether it is from use of certain articles of food, which are not healthful to such persons, we cannot say.

**SYMPTOMS** generally are pretty diagnostic. Two always present, dropsy and albuminuria, which although present in acute, have also acute symptoms—e. g., fever, nervous symptoms, etc., which are absent in chronic. Early symptom is increased frequency of micturition, patient has to get up at night, or passes water more frequently in day time than formerly. Oedema usually begins at eyelids, and face is accompanied by doughy pallor, then or simultaneously in ankles. Urine is pale, large in amount, and has a persistent low sp. gr., 1010, sometimes find low sp. gr. in urine of person who drinks much water or ale at meals, so always direct the patient to bring urine passed immediately after arising, and judge not from one test. Albumin is persistent, and usually great quantity of urine is passed and usually it contains casts, either fatty or granular, or if late in the disease have hyaline casts, which are significant of the small granular kidney. Heart is often hypertrophied, but not so often as in the interstitial; albuminuric retinitis is often seen. Some degree of headache.

**DIAGNOSIS**—Rests on persistent dropsy, low sp. gr. of urine which persistently contains albumin, and tube casts.

**PROGNOSIS**—Never after it becomes chronic is it recovered









from, but by proper treatment can make patient comfortable, and prolong life. He is liable to attacks of the inter-current diseases, as bronchitis, pneumonia, which would be grave under patient's condition, likewise endocarditis and pericarditis.

**TREATMENT**—When in late stages and the urine is small, give digitalis. Promote nutrition by steady employment of iron throughout the whole disease, which probably prevents advance of disease. Often find marked improvement in complexion, and respiratory powers, and even diminution of albumin. Basham's Mixture is best, as it is pleasant to take, and the iron in it is in extremely soluble form, as it results in acetate of iron when made; dose, dessert-spoonful 3 to 4 times daily. It not only acts on the blood, but is mildly diuretic. If patient becomes emaciated and loses flesh, give cod liver oil, even in the fatty form of the disease, which is a form of fatty degeneration. *Diet*: Take limited amount of animal food—e. g., meats, do not remove altogether, as the patient becomes weak, but let him limit himself to once a day, but if he does well without animal food let him continue to do without it altogether. Many do well on an absolutely milk diet. Always wear woolen garments in summer as well as in winter; of course change weight. If acute symptoms come on, which is not infrequent, as they are probably more liable than others free from disease, use the same treatment as in acute. *Dropsy*: When very great may require treatment—e. g., when in lower extremities it may become great, and may affect serous cavity. May use purgative, then digitalis is good, and if ascites is great paracentesis should be performed. *Dyspnoea* is often present, even without the presence of dropsy, but is more marked in chronic interstitial nephritis. When it is present hypodermic use of morphia is good, and probably acts by lessening susceptibility of nervous system. Nitro-glycerine, one-hundredth gr., hypodermically, often acts wonderfully. Another remedy often good is Hoffman's Anodyne, *dr.* j in water, every hour for several doses.

**Chronic Interstitial Nephritis.**—It is chronic always from the start. Situated primarily and principally in the stroma, the tissue holding the tubules together; it is also called Cirrhotic Kidney. This is so called because it is analagous to some change in liver, but the name is more applicable to the liver, because the liver has a yellow hue from fatty change and deposit of bile pigment. Change similar to change in liver is often called Gouty Kidney, which is proper only to a certain degree, as it is not necessarily associated with gout, but at times Chronic Contracted Kidney is legitimate, because the organ always, if the disease runs its course, becomes contracted.

**MORBID ANATOMY**—At no time is there much increase in size, but there may be a small amount at first because there is cell increase in the connective tissue, but later contraction occurs and the organ is smaller, sometimes  $\frac{1}{4}$  its natural size. May in some cases be the size of a walnut. Capsule is thickened, and is adherent, and when peeled off brings some kidney structure with it, because the connective tissue holds the capsule on the kidney, and it is inflamed, while not the case in acute or chronic tubular nephritis. On section the cortical portion is mainly marked in diminution of size. The connective tissue is infiltrated with cells, which contract and cause atrophy or diminish the calibre, or in some cases obliterating the tubules and interfering with the function. Some tubes contain granular cells, others may contain hyaline substance. The arteries have marked changes in their intima, especially in malpighian tufts, which is probably often due to the general arterial change, as often the arteries in general are so degenerated. Kidneys are not only affected, but other parts of the body, especially arteries. It is a general tubular disease, with local manifestation.

**ETIOLOGY**—Often seen in gouty subjects, especially if gout has been present a long time. Sometimes met with in chronic lead poisoning. Active brain workers are said to be more often affected with it than those who are indolent









and phlegmatic. *Rheumatism*, but not so often as gout, because rheumatism occurs in the younger chiefly, while the kidney trouble is in the old. Alcohol, but not so quickly, as it affects liver, because it reaches the liver first in less diluted form than the kidney, yet it might slowly produce the change in kidney. Again, there are cases the cause of which cannot be found—e. g., they were temperate, they were not addicted to over-eating especially. Undue use of animal food—i. e., meat three times daily for a long time, because nitrogenous elimination takes place chiefly in the kidney. Probably the only way to account for those cases where no cause can be found, is that there was a pre-existing tendency to arterial changes, rare before 25 years, most frequent between 40 and 60 years, because the cases must act a long time where they act slowly.

**SYMPTOMS**—Often obscure at first, and often impossible to diagnose; at first the habits may lead you to suspect; first symptom is a desire to pass water frequently, which may for a time not contain albumin or casts, the water is in large quantities, pale and of low sp. gr., 1000 to 1004, but do not come to conclusion from single examination, because it often is low and pale after dinner. If albumin is persistent in water passed immediately after arising it is important. Dropsy is often absent in this form of trouble, and patient by it in other forms comes to complain of it. If present it is small in amount. He continually grows feeble. Stomach trouble, dyspepsia, acid eructations which may lead him to consult a physician. Insomnia is frequent, and headache is persistent almost, and sometimes are convulsions and coma especially likely to occur after mental or physical exertion, and although you find no albumin before, at the outset of convulsions or coma you will find albumin. In this form there is apt to be considerable amount of urine passed. Casts may be found at times but not universally; when found they are apt to be granular, and small because tubules are compressed. Later when cells are stripped off have hyaline casts. Dropsy is small if present; it may be entirely ab-

sent. *Nervous Symptoms*—Diplopia, vertigo, at times headache, almost always present. Nervous Dyspnoea more often in this than any other form, and may be accompanied with Cheyne-Stokes breathing, frequent in the latter part of the disease, but before death the breathing comes normally again. Irregular action of heart is quite frequent, and a very important sign is an accentuation of the second sound, almost ringing in character; the reason is that, as before stated, the kidney is merely a local manifestation of general arterial degeneration, which causes hypertrophy of heart which is usually confined to the left ventricle, and from backward pressure, due to lessened calibre of arteries, causes quick closure of the aortic valves. *Hypertrophy of Heart* is greater in this form than any other form of kidney disease, or at times they occur simultaneously. Disturbance of sight is very common; may be in one or both eyes; due to Neuro-Retinitis, recognized by the ophthalmoscope. Optic papilla is cloudy and swollen, retinal veins are disturbed and tortuous, and white patches are on retina. Often the ophthalmologist are the first to diagnose the disease.

DIAGNOSIS from *Diabetes*: In both the water is great, and patient emaciates, and has dyspeptic symptoms. But in Diabetes we have high sp. gr. and presence of sugar. Chronic tubular Nephritis, distinguished by the history partly whether patient had gout, alcohol, etc., but main point is tubular dropsy, and albumin is always present, and generally great.

PROGNOSIS—Always slow, and gradually grows from bad to worse, but if patient takes good care, and with proper treatment, may retard the process. In this disease convulsions or coma are most apt to occur. Again, more apt to be accompanied with inflammation—e. g., pleurisy, pericarditis and endocarditis. Again, patient is more apt in this form to have cerebral appoplexy, which is one of the marked dangers of this variety.

TREATMENT—If in direct relation with gout or rheumatism, the alkaline treatment—salicylate sodium. Good plan is to keep patient on mild lithia water, the Buffalo lithia,







Bear lithia, etc. Chloride of gold, or Bichloride of Hg. is recommended; this would in syphilitic trouble be good, but they cannot produce absorption of scar tissue. For dyspnoea, give nitro-glycerine, which gives most material relief; best when the dyspnoea is urgent with tumultuous action of heart. Headache sometimes is relieved by it,  $1/100$  gr., two to three times a day; if no relief, increase gradually to  $1/50$  gr., but do not give this much the first time. Often find great anaemia, but unfortunately iron is not well borne, that is, it increases headache in many cases, in others it does not, may try it. Watch diet, give meat once a day, and then a very small quantity. Milk diet is best, may give sweet milk. Butt's milk cream, or Koumis is better borne at times. Give tonics, HCl and pepsin. Make patient always wear woolen clothing, both winter and summer. Let him live in moderate and unchangeable climate, Egypt if patient can afford to go there.

**Waxy Kidney—Amyloid Degeneration of Kidney.**—Some say that we ought not to regard this as Bright's Disease, because many other organs are affected with the same change. Dropsy, albumin, and often casts are found, so if we do not call it Bright's Disease we could eliminate chronic interstitial disease from that class for the same reason, because the arteries generally are involved.

**MORBID ANATOMY**—Find the kidney infiltrated with amyloid substance resembling starch in appearance, and it gives the same reaction with  $\text{HNO}_3$  and iodine that starch does, but differs as it is a nitrogenous compound. Some say that it is always preceded by chronic tubular nephritis, and hence they say it ought to be called Bright's Disease, but Dr. Chew says this is not true, and would rather accept above reason for including it in the so-called Bright's diseases. The amyloid material first appears in the walls of the small arteries, especially of the malpighian tubes, then it affects those of the tubules, and finally the tubules, and the cells themselves; often there is no marked increase in size. Paler than normal, on section if there be any enlargement

it is chiefly noted in the cortex, and the division between the medullary and cortex is obliterated. Amyloid may affect the mucous membrane of the intestine, causing diarrhoea. Cardiac Hypertrophy is seldom present in this form of Bright's. Microscope shows the tubules atrophied, and the cells are lost, and often do not find amyloid disease; with iodine get brown color with  $H_2SO_4$ , and iodine gives a blue color.

ETIOLOGY—Great deal of obscurity as to the cause, as we know little of chemical changes, but clinically it is met with frequently with syphilis, and with prolonged suppuration, especially if in bone. Not infrequently is it associated with chronic phthisis. Dr. Dixon attributes it to lack of potassium salts in the system. Often it occurs with empyema, or any prolonged suppuration.

SYMPTOMS—Not well marked, at first associated with suppuration or syphilis, and patient notices that he progressively gets weaker, and it is attributed to suppuration, and then urine becomes more frequent, and patient has to get up several times during night, and it is of low sp. gr., and patient has a feeling of fullness and tenderness in the right and sometimes the left hypochondriac region, and liver is often much enlarged. May have it of kidney without same changes in liver and spleen, but if in liver the kidney is always involved. Albumin is in urine, some oedema in lower extremities, especially ankles, particularly at night. Skin, especially of face, is of waxy appearance. Patient may pass 3 quarts of water, which is pale and of low sp. gr., 1005. Albumin always is present, but in small amount, thus it differs from the chronic tubular disease when it is large, and from the interstitial because it is not always present. Casts sometimes are finely granular, and at times are hyaline. *Dropsy* is not so marked as in tubular, nor are the nervous symptoms so marked as in the interstitial, but patient may have slight headache, but seldom convulsions or coma. (Note—With these changes may have more or less fluid in the abdominal cavity, but this is due to changes in liver.)







**DIAGNOSIS**—By history of prolonged suppuration, presence of albumin in urine, slight amount of dropsy.

**PROGNOSIS**—As it occurs with incurable diseases, often its prognosis merges into that of the associated disease, but if it be due to tertiary syphilis, by proper treatment you can prevent progress. In Phthisis it belongs to the stage when cavities exist, and hence prognosis is bad. In Empyema, if the kidney be only to a limited extent involved, you can do good by washing out the cavity. Patient may die of abdominal dropsy, or exhausting diarrhoea. Patients of this disease are not so liable to pneumonia, bronchitis, nor pericarditis, as in the other forms.

**TREATMENT**—Seek the cause and treat that; if it is syphilis give Hg., etc.

## GENERAL DISEASES.

**Malarial Fevers** mean that form of febrile disease characterized by, 1st, periodicity of paroxysm; 2nd, succession of stages in each, and 3rd, prevalence in certain regions. Principal ones: Intermittent and Remittent, sometimes called Miasmatic, and also Telluric, because the poison of these was thought to emanate from earth.

**CAUSES**—Nature of poison, although about ten years nothing was known concerning it, yet a great deal is to be learned about its nature; chemically nothing is known. Certain conditions are necessary for the development of the micro-organism—first, water or moist soil; second, decomposing vegetable matter; third, temperature not below 50, F. for at least 24 hours, for these reasons it is found to develop in moist low regions as marshes, but sometimes it has been found to develop in porous sandy soil, but when clearly investigated was found that decomposing vegetable matter was in the soil; also it in some cases has been found in soils composed chiefly of granite rock soil, as off Hanking, China, but fungoid decomposing vegetable matter was found. Size of the vegetable matter makes no difference. Again, in

some regions for some time no fever was developed until *in summer* when the soil was upturned to look after sewage<sup>ER</sup> and lay gas pipes, and then it was generated, as the matter was present, and when upturned it becomes moist; the heat from sun and moist gases and soil have been examined to see if any chemical substance that would account for it could be found, but could not, but it is accounted for simply because the conditions are present in soil for the development. Seldom seen at elevation of 2000 feet, but at certain parts of tropical regions it has originated simply because at some time in the day the necessary conditions were present. Drinking water may be the medium of transmission, but usually it is transmitted through atmosphere—e. g., in marshy country. The Poison is under influence of Gravity—e. g., the first range of hills would have it, while the second range of hills would not, and often woods or forests seem to intercept the poison mechanically in some way. Often persons in lower floors of house will suffer, while those on top floors are not attacked. Second, influence of vegetation and drainage; third, direction of the wind. The extension northward of the disease has increased, for formerly it was not seen further north than the Hudson river, now it is seen in Canada. There are certain diseases which are caused by malaria, viz: dysentery, neuralgia, and are to be treated by quinia, they take on a periodicity. Malarial fevers are non-contagious, nor can they be inoculated from one to another. It is very probable that the Poison can be intercepted by mechanical obstacles, and this was shown by experiments of Lieutenant Murray, who intercepted it by planting sun flowers in Washington. So the true cause of malaria was not the water, vegetation, or temperature, but the *malarial organism*, the *Plasmodium Sanguinis*, the malarial germ found sometimes floating in the liquor sanguinis, and in red blood cells. They are probably breathed in from the atmosphere; very doubtful whether they are transmitted by drinking water or food. *Malaria means bad air*. There are certain laws governing spreading of malaria; it is usual-









ly endemic, and will not be transmitted by air over water a distance of four and three quarter miles. They will easily travel the same distance by land. These organisms are killed by quinine. After the English obtained possession of the Isle of New Zealand, it was observed that where the Eucalyptus grew no malaria was present, whereas in other parts without Eucalyptus growing it was present. This is probably due to the rapid growth of the tree and in such density that it absorbed the moisture of soil. It was tried in the marshes of Rome, and in Isle of Jamaica, etc., with good results. The difficulty is that the Eucalyptus tree will not live in a cold climate, even our winters kill it—it will not live further north than southern parts of N. C. or S. C. An extract of it has great periodic action, not as good as quinia. *What is the true and essential cause?* In 1879 Klebs and Tommasi-Cru-  
deli announced the discovery of certain organic bodies, found in air of marshes, which had spores, and would cause symptoms similar to malarial paroxysm, but this was held with discredit, but in 1880 far more important scientific investigation was made by looking in blood of person laboring under malaria. Lavarán, a French army officer first described the germs and said they were organisms belonging to the lowest class of parasites. They are the Protozoa and being found in blood are a sub-group called *Hematozoa*; they are found in different forms: First, certain hyaline, transparent, non-pigmented, very active bodies only in the red corpuscles; second, certain amoeboid cells within the red corpuscles which are often pigmented, and can move about and may segment; third, crescentic bodies with clubbed ends in blood and now and then oval or pear-shaped parasites with flagellae. Exact cause-relation of these bodies has not been made out, but some one or two hold out that at times are seen more of one variety than of others and vice versa, and they suggest that the different varieties account for the very different types of malaria. It is thought by some that they are the same in different stages of development. Two scientists, Marchiafava and Celli, say that crescentic belong to

~~inter~~<sup>RE</sup>mittent, but it yet remains to be solved whether they are the same in different forms, or whether the different forms are the cause of the disease. *The reason that we know they are the cause is:* First, they are always found if carefully sought after; second, the entire disappearance of the plasmodia after the disease is cured; third, the red corpuscles can be seen in various stages of disintegration, while the organism is still acting on them; this causes insomnia. Much still remains to be learned; the organisms have not been cultivated, nor have inoculation experiments been successful; whenever found you know that the disease is malaria. The causal relation between plasmodia and malaria is not yet definitely determined. In order to establish it fully there are three things necessary, first, invariable presence of germ in the disease; second, possibility of cultivating the germ; third, possibility of transferring the disease by inoculation. The first is always true, but the other two have not been established.

**Intermittent Fever** is an acute, infectious disease, due to the presence of the malarial germ and characterized by periodical recurrences of chills, fever and sweating, and the absence of febrile movements in the interval. Intermittent fever begins often with premonitory symptoms, lack of appetite, some nausea, pain in back and limbs, slight rigor, and may continue for days before the paroxysms begin, then often paroxysms begin suddenly. Paroxysms are divided into three stages: 1, cold stage or chill; 2, hot stage, the duration depending on nature of fever; 3, sweating. Then comes the intermission, when there is no fever present. *Interval* means the time occupied by paroxysm, and the period of apyrexia also; viz., from beginning of one to beginning of next paroxysm.

**TYPES OF PAROXYSM:**—1, Quotidian; 2, Tertian; 3, Quartan; 4, Double Forms; 5, Dumb Ague and masked forms; 6, Those in which there is a tendency to recurrence every seven, or fourteen, or twenty-one days. *Quotidian* paroxysm every day, and the interval is thus seen to be 24 hours, al-









though patient feels cold, he is really in fever. *Tertian* paroxysm every second day, intervals 48 hours. *Quartan* every fourth day, and here interval of three days. These are the most common types. Quartan is far more rare than any of the others; in 98,237 cases, 51,623 were quotidian, 44,857 of tertian, and only 1,757 of quartan type. ~~almost as frequent.~~ In Baltimore the tertian is most common. The above are the regular forms, but we have irregular forms—e. g., *Double tertian* intermittent—e. g., on Monday, Wednesday, and Friday have severe paroxysms; whereas on Tuesday, Thursday and Saturday are more slight, and it is simply curious and are really quotidian. *Reduplicating tertian*—e. g., every third day have two paroxysms. The cause of the difference in type is not known exactly, but it is at least probable that one particular organism predominates, and others do not, but it is yet to be decided. If the disease be neglected and have no treatment for a time, the paroxysm will occur earlier in the day, that is, there is a tendency to anticipation, probably due to the organisms increasing in number, and thus more are left non-eliminated after attacks. The quantity of quinine varies which will break up the attack in different persons; this shows that some are invested with more organisms. Sometimes the quinine, if given in small quantities, will make paroxysm come later instead of earlier. In quotidian and tertian of mild type often will abate after a time without treatment, but quotidian is usually very obstinate and requires persistent treatment, and it is probably due to some especial form of organism, which is more resistant to quinia. The tendency to malaria may last a life time, viz: one attack seems to predispose, and one type in process of recovery may pass into other, as quotidian into tertian. Again, intermittent, if neglected, may pass into remittent. Remittent often becoming mild will become intermittent.

**SYMPTOMS:**—*Cold stage* may or may not be premonitory symptoms. In cold stage patient is chilly, especially along spine and extremities, skin shriveled, nails blue, and on the skin thermometer shows lowered surface temperature as

blood is driven into internal organs, but rectal, mouth, or axilla temperature will show somewhat elevation of temperature, 101 to 102, not so high as in next stage. *Cold* is only a subjective sensation, creeping sensation down back and loins. Lasts ordinarily half to one hour, but at times may be two to three. Skin rough from "Cutis Anserina." *Hot stage* lasts five or six hours usually; begins with flushing of head, alternating with rigors at first, then hot with red skin; pulse full and rapid, headache, nausea and vomiting frequent. Temperature higher, 104 to 105, at times 107. There is hardly any disease when temperature is higher than in hot stage of intermittent, but in latter is not constant, but in typhoid is continuous and deleterious to patient. Lasts from one to two hours. Patient very restless and eye red and fiery. *Sweating*—Temperature gradually abates. Sweat shows first about brow, and then elsewhere, and very profuse. Headache abates and patient feels better. Urine is increased in amount. Temperature gradually lowers until the stage of intermission, when there is not fever, etc. *Kidneys*—Often in cold stage, especially if long, the amount of urine is increased, because flow of blood from surface causes increased activity of kidneys; in hot stage it is diminished, has a high color and higher sp. gr., because waste goes on more rapidly. If cold stage be protracted, may find albumin, and even casts, which are transient only. *Blood* may change in noted degree if not checked, but if checked there is some change. If allowed to go unchecked it diminishes the red cells by plasmodia destroying the cells. Hence after destruction of corpuscles have anaemic or functional murmurs, because blood has lost its solid constituents, and is hence thinner. During paroxysm the white cells are more numerous, but probably due to the diminished quantity of red, hence only relative.

MORBID ANATOMY—Death is rare in uncomplicated cases, but has been adequately studied in death intercurrently. Stomach and duodenum undergo hyperaemia, liver and spleen are enlarged but indurated. At times the spleen reaches



Thaw



very far down, losing its elasticity, and its stroma is increased, and hence induration; may reach Poupart's ligament. You cannot refer it solely to recession of blood in internal organs, because if this was true, would only have when continued paroxysm, but as matter of fact have it in chronic malarial poison when there is no perceptible chills. Probably due to paralysis of vaso-motor nerves of splenic vessels. The liver is not so conspicuously enlarged, but may be softer, and regain the size in intermission, but in chronic cases may undergo some change. Color changes marked from pigment. (*Note*—Intermission succeeds the sweating stage, and here at first the patient feels well and is entirely free from fever, but if the attacks continue frequently, soon the Cachexia sets in; viz: general malaise, anorexia, jaundice, and pigmentatis of skin, etc. Great anaemia.)

DIAGNOSIS—1, From *Remittent*—The temperature does not reach its normal, usually one chill, and only abatement of temperature. In intermittent fever there is complete intermissions. Typhoid is generally easy but likely to be confounded with remittent; do not have absolutely normal temperature in chills. 2, From *Pyæmia*—Have paroxysmal recurrence as in intermittent fever, but almost always history of some suppuration, and the paroxysms are not regular as in intermittent fever. Then in pyæmia have peculiar sweet breath.

PROGNOSIS—Often if left to itself intermittent may work its own cure, but never wait for this, because each paroxysm increases the effect on the blood, causing great anaemia, and dropsy at times, and spleen and liver enlarge, and blood becomes greatly deteriorated. Why does it present itself in that peculiar way? It has been a great deal discussed, but now it is likely that organisms which are small in amount at first gradually increase, and then comes an effort of nature to get rid of them, and the cold stage is the beginning of the effort; and although this is held it is not eliminated in sweat, but it is probable that they are disintegrated, and later they increase again, that is those left, and then another explosion.

TREATMENT—Quinine is the best anti-periodic, but in cold stage is there anything to be resorted to to prevent the intensity and to make the patient more comfortable? Often, especially if patient had taken meal shortly before, nausea and trials to vomit often very disagreeable, so aid vomiting by giving mild emetic, as salt water or mustard (one tablespoonful to 6 oz, or  $\frac{1}{2}$  pint of water,) this should now be a routine practice, and if constipation have bowels evacuated by enema. Giving purgative acts two-fold: it cleanses out the bowels, and makes quinine act more quickly. If protracted cover with blankets, apply hot bottles and mustard plaster, which lessen the congestion of internal organs and brings blood to surface. If you are called in just before the stage of cold, (and the first attack was very severe,) give vi. m. Magendies Solution hypodermically, as it diminishes the severity of the cold stage. Again, if in the midst of the cold stage and it is very severe, give hypodermic of nitro-glycerine ~~1-100~~<sup>700</sup> grain, and thus invite blood back to surface. Then in hot stage uncover and make patient comfortable; it is useless as a rule to give quinine in this stage, but give apollinaris water, or other effervescent drinks to relieve nausea. Now in the intermission the influence of quinine should be quickly invoked. And the longer before the next paroxysm, the more likely is it to prevent the attack; probably explained by the fact, that at that time the poison is least and quinia copes with it better. So best to give quinine as soon after paroxysm as possible; give at the close of sweating stage. Quinine may be given in large dose at once and repeat, or give frequently in small doses. But probably it is better to give large at once, say 8 to 10 grs., and repeat at some time during the intermission, but give so that 10 to 15 or 20 grs. may be taken in the interval. Since patient can better bear small doses, say then give 2 or 3 grs. every hour. It is best given in solution, as it is absorbed quicker, but so bitter that some patients object. So then resort to pills or capsules, but they should be fresh, for on standing they get hard and will not be absorbed always.







Some persons do not object to taste, so then give in solution. Quinia is thought to be directly destructive of the organism. At times we often find stomach so irritable that it will not do to use quinine, so then give hydrobromate of quinia hypodermically, as it is more potent. If the next paroxysm is prevented, do not stop the quinine, as the disease may return, so continue giving quinia for several days, 3 to 4 grs., three to four times daily. Often in malarial fevers you find a tendency, in spite of continuous treatment, to return in one, two, or three weeks. For this give 3 grs, t. i. d., and on day previous to expected attack give 10 grs. In some cases of malaria quinine seems to have its powers lost, and in others there exists an idiosyncrasy—e. g., causes mental and dermic disturbances. Next to quinine as an anti-periodic is arsenic, the dose of Fowler's solution is  $\frac{1}{4}$  v. t. i. d. Be watchful of it as it may have an accumulative effect, shown by three symptoms: First, puffiness of lower lids; second, constricted pains about forehead; third, itching and redness about eyelids. If any of these occur withdraw the arsenic. Give it no longer for two weeks, then may begin again. Massanuttan water from Massanuttan Springs contains arsenic, and is useful in malaria. At times the patient will relapse over and over again, and in this case watch carefully the liver and spleen, and if the liver is enlarged it is torpid, and patient is constipated, with light stools. Now give  $\frac{1}{10}$  ~~10th~~ gr. calomel every hour, until free purgative effect is produced, and then next morning follow by saline cathartic, and then quinine will better get in its effect, as it is a settled fact quinine is interfered with by congested or chronic torpor of liver; may give blue mass. If there is intolerance for mercury give  $\frac{1}{4}$ th gr. of podophyllin, or two or three grains extract Taraxicum.

**Malarial Cachexia.**—You often have to treat, and you should always advise patient to move away from the malarial district for a time; he then stands a better chance to recover, and still treatment is needed; first, if anaemia is often marked, give tincture of chloride of Iron, 15 to 20 gtts. t. i. d.,

and often this alone will cause diminution in size of liver and spleen, but better with the quinine, but if these alone will not answer rub over spleen region, Hg. Biniodide about the size of a pea.

**Masked Malaria.**—There often occurs masked intermittent symptoms—e. g., *neuralgia* in a periodic form, without any open attacks either of remittent or intermittent fever, but in such cases give large doses of quinine. Nerves most often involved are the branches of fifth, one branch or more. Intercostal nerves, and less frequently the Sciatic are affected. *Diarrhœas* and *Dysentery* may take on the same periodic character, and wherever these bloody flushes occur give quinine boldly, as astringents will do no good. Some forms of *hemorrhage* are very common, also taking the periodic nature of malaria—e. g., hemorrhage from rectum on one day, and on third day it again occurs, and so a third time without any local lesion, and under influence of quinine in such cases it has been repeatedly cured. Analogous to this we sometimes have *Hæmaglobinuria* of malarial origin, in which there is profuse bleeding from kidneys. In all cases the hemorrhage is probably due to disintegrating effects of plasmodia on corpuscles. Analogous to this we have what is called *Malarial apoplexy*, in which patient falls into comatose conditions; in some cases it is true apoplexy, but in others the patient recovers without any paralytic results; it is probably in these cases due to influence of poison on nerve centers.

**Remittent Fever—(Bilious:)**—An infectious disease, caused by the malarial germ and characterized by remissions of fever, but not complete intermissions; due to same cause, curable by same means as intermittent, and their relation is shown by the fact that intermittent, if not treated, becomes remittent, and the latter often in recovering becomes intermittent. So they are alike in kind, but differ in degree. Why is it we have one in some cases, and in others we do not? Why it may be due to greater predominance of this plasmodia in remittent or as suggested by Marchiava and









Celli, that due to the crescentic form of plasmodia is more marked. Term "bilious fever" is inaccurate and unscientific, because although jaundice is often present, yet also often present in intermittent; no stages of the disease are perfect. The fever may be high during the remission, but not so high as in paroxysm. Apyrexia occurs when the disease is recovered from. It may be regarded as one prolonged paroxysm, beginning with chill and terminating by profuse sweat; urgent symptoms abate but do not soon disappear.

**SYMPTOMS**—Often have marked premonitory symptoms as general malarial headache, nausea, and other evidence of gastric disturbance; praecordial uneasiness and fullness in abdomen may last from 12 to 24 hours before attack. Always nearly begins by chill varying in intensity; chill is followed by fever and sweating stage. The Remission always as a rule is in morning, and this is important, as under certain circumstances there are better results by giving quinine at this time. If exacerbation begins in mid-day it declines about night, and then begins about middle of next day; and if exacerbation at night, remission in morning, and rise at night. At times have double remission, as exacerbations at midnight and others at noon. May terminate in recovery, intermittent fever, or death. The morning and evening temperature on successive days are about the same, but in typhoid the morning temperature, although lower than that of the previous evening, is higher than that of the previous morning, and the evening higher than that of the previous evening. If recovery occurs the disease usually terminates by profuse sweat, which may be considered as analogue with sweat of intermittent, yet at times sweat does not occur.

**CAUSES**—More prevalent in the hot climates, and due to malarial organism, but not proven as regards crescentic ~~as~~ *Cold Stage*—Chill of remittent is usually not as prolonged nor as severe as that of the intermittent, and it is simply a subjective feeling. *Hot Stage*—Usually begins by nausea and vomiting, and this is marked through the whole stage; as a rule epigastric uneasiness not relieved by vomiting.

Pulse is more frequent, 110 to 120, and fuller than in the cold stage; in the robust, it is full and bounding; in feeble is fast and weak. Temperature rises 104 to 106. Severe headache, and suffused eyes, and this lasts from 3 to 12 hours when remission begins, and the temperature declines to 101 to 102 and vomiting is better, and some moisture may be present, etc.—and after variable period from 2 to 12 hours if not checked, the fever again rises, but generally no chills. Vomiting again becomes prominent, may be a watery fluid, and then bile, probably due to pressure on duodenum in the effort.

**SYMPTOMS**—If cold stage the chill lasts not as long as in intermittent. Hot stage: first, gastric symptoms; second, pulse; third, temperature; fourth, jaundice; fifth, sometimes hemorrhage from mucous surfaces; sixth, delirium; seventh, constipation; eighth, headache. Vomiting in the first paroxysm may simply be of contents of stomach, and later becomes as above stated. Jaundice is marked and is haematogenous, due to effects of plasmodia on blood preventing absorption of the bile, and it is owing to the bilious vomiting and jaundice that the disease is called bilious fever. At times bilious vomiting may be dark and resemble black vomit of yellow fever, and for this there may be doubt in diagnosis. In addition to general history of case the dark matter of remittent is altered bile, while in yellow fever it is altered blood; this can be shown by microscope and nitric acid test, but at times these do not always make clear, as at times hemorrhages form—e. g., stools from mucous tracts, when we must wait for development. *Delirium* often present in the hot stage, especially present in children, and depends directly on the height of fever. In *adynamia* may be muttering. As a rule the bowels are constipated, but at times diarrhoea may come on. Urine is scant and highly colored possibly, but not common to have albumin in yellow fever. *Later Stages*: The condition the patient assumes resembles the typhoid state with the sordes on the teeth, etc., and with (as sometimes happens) diarrhoea, and have hemorrhage









from bowels, and quick and feeble pulse. Difficult to make diagnosis from typhoid, usually comes on in neglected cases, and quinine diagnoses it. Quinine has control over the remittent, and does not have any over typhoid. The morbid changes resemble intermittent fever, being one of degree and not of kind. Liver is congested and contains pigment and spleen is enlarged; change in color of these organs is marked more than in intermittent.

**DIAGNOSIS**—May be confounded with intermittent and typhoid fevers. Distinguished from intermittent by the thermometer, by greater gastric symptoms, and by jaundice. It is often difficult to distinguish from typhoid. In both the pulse is quick, and occurrence of hemorrhage from bowels, and continuation of fever, and sordes about mouth; when doubt exists observe action of quinine.

**TREATMENT**—Is as if it were intermittent fever, and if large doses will not break it up, the treatment will do no harm. Typhoid fever begins more insidiously; if there be premonitory symptoms more likely that it is remittent.

**PROGNOSIS**—Good when treated in beginning, but delay may cause death. Calomel good, as well borne by the stomach, and acts especially on upper part of canal.

**MORBID ANATOMY**—Mortality is greater than in intermittent. There are certain special changes in degree, and this is due to breaking up of the red corpuscles and causing stoppage of various arteries; this is most marked in liver, and called "Bronze Liver". In many cases when there is doubt during life whether it be yellow or remittent, the liver will on death clear all doubt. The haemaglobin is broken up, and the haematoidin is deposited in the liver cells and interlobular tissue and in blood vessels among the liver cells, also in marrow of bone. Liver is enlarged and of a dark bronze color; spleen is enlarged and softened, and easily broken down.

**TREATMENT**—In cold stages little is to be done, as it is transient and soon over. In hot stage, ordinarily not necessary to begin the administration of quinine, but wait for

the remission. For *nausea*, if alone, give mild emetic, as salt water, alum, mustard water, which empties the stomach of the irritating parts, and if *constipation* exists give some saline cathartic or extract of colocynth gr. v. to vi., or a C. C. pill. If nausea still persists give hypodermic of morphia, or 5 to 6 <sup>SOLUTION OF</sup> of Magendie's chloroform by mouth in syrup and water. For the continuous nausea which is not relieved by vomiting, give one of the effervescing carbonated drinks, as appolinaris water. For headache use cold to head, and place feet in hot water, and if it continues, give hypodermic of morphia, which not only relieves pain but may limit the febrile process. During remission in ordinary case, give full doses of quinine, gr. ten to fifteen, but if have history of severe previous exacerbation, give it in the febrile stage and do not wait, and although all will not be absorbed yet it will to some extent be, and we want to get the organism under the influence of quinine as soon as possible. If nausea be a prominent symptom quinia may be rejected, and if such be the case, give hypodermically 20 m of solution of the Hydrobromate of quinia, and repeat at intervals of two to three hours as needed.

**Pernicious Fever**—Malignant malarial fever, or congestive fever, or congestive chills, so called at times, causes the same effects as remittent, but the pigmentary changes are more marked, and it is the severest and most dangerous form of malignant fever. It is true in the majority of cases that the internal organs are congested more or less, and in some cases the patient may be overcome by such congestion, but in a large number of cases no such congestion exists, and under such circumstances the term Pernicious is to be preferred. In its severe form it may be remittent, or intermittent; but most commonly it is of tertian and quotidian types. In true, congestive forms the skin is shrunk, and there is collapse and feeble pulse. The surface temperature may be very low, but rectal temperature 106 to 107. Prognosis is bad.

**VARIETIES AND SYMPTOMS**—I, the *comatose*, in which, du-









ring the hot stage, the person becomes very drowsy and may sink into profound coma. The pulse in this form is full and strong and slow and the respiration slow, the face flushed and pupils small. The temperature often reaches  $105^{\circ}$  or even  $107^{\circ}$ . 2, The *delirious* form, in which there is wild delirium in the hot stage. The pulse is rapid and the respiration hurried. 3, The *gastro-enteric* form, in which there is profuse vomiting and purging. The pulse is rapid and feeble, and the extremities are cold. There is sometimes complete suppression of urine, and it is always scanty. 4, The *Algid* form, in which the cold stage persists, and the extremities become very cold, though the internal temperature is elevated. The pulse is rapid and feeble, and in bad cases disappears from the wrist. 5, The *Icteric* form is characterized by the occurrence of jaundice, which comes on quite suddenly, usually in the hot stage. The pulse is often unusually slow in this form, and stupor and muttering delirium are common. 6, In the *hemorrhagic* form there is apt to be hemorrhage into the serous cavities and into the internal organs, especially the kidneys. The symptoms are very variable, depending on the seat and amount of hemorrhage. It should be remembered that *malarial haematuria* is not always pernicious in character. It is not possible to explain the causes of these different forms. The *icteric* form is probably due to a very great destruction of red blood corpuscles; the *hemorrhagic* to profound changes in the walls of the blood vessels.

DIAGNOSIS—1, The *comatose* form is distinguished from *apoplexy* by the fever and the absence of hemiplegia, and by the gradual onset. 2, The *delirious* form is distinguished from *meningitis* by the chill which preceds it, and by the more rapid rise of temperature.

PROGNOSIS—is usually unfavorable. It is based on the form, the *algid*, *icteric* and *gastro-enteric* being the most fatal; and on the locality—all cases being worse in a hot and marshy locality.

TREATMENT—Use such agents that invite blood to sur-

face, as hot water bags, baths, and fomentations, alcoholic stimulants, hypodermic of nitro-glycerine ~~x~~ <sup>1</sup>/<sub>100</sub> gr., and large quantity of quinia hypodermically irrespective of the stage of the disease. In all forms of malaria, when quinine seems to be unable to check it, try Warburg's Tincture, and in many cases it will relieve; it contains 7 grs. of quinine to the dose; dose one tablespoonful.

**Typho-Malarial Fever.**—(Camp Fever, Malarial Typhoid Fever, Continued Malarial Fever, etc.,) occupies a midway place between malarial and continued fevers, and it is not a distinct form of fever, but is really a true typhoid with the malarial stamp impressed upon it. It has a blended form of disease, due to the fact that the two poisons are operating at one time. Sometimes we find a typhoid fever with engrafted malarial fever, but again have a remittent fever in which the patient is weak, or the case was neglected, and hence we have typhoid conditions. Typho-malarial has more marked remission of fever than typhoid, and more diarrhoea than in remittent. Rose spots occur in most cases, and show what the nature of the disease is. Pulse is ordinarily observed quickened where fever is high, but in this condition the pulse in many instances is not correspondingly accelerated in frequency. There is more amenability to quinine in this than in typhoid, in which quinine will not break it up. But in Typho-malarial fever the fever will be reduced to a more uniform type, controlling malarial and leaving typhoid to be treated as typhoid, which occurs independent of any malarial poison.

**Typhoid Fever.**—Continued fevers are Typhoid and Typhus. (Enteric fever, Abdominal Typhus, Pathogenic fever). The term typhoid is a bad term, as it comes from the word typhus and etymologically means like typhus. This was thought to be true and that they were only degrees of the same disease, but owing to the researches of Louis and Jenner, we know that they are entirely different, both in pathological character and severity. The term typhoid has become so fixed on the nomenclature that it is hard to change







it, and disregarding the etymological significance the term is all right. The best name is *Enteric Fever*, as it denotes the site of the special lesions of this fever. The Germans call it *Abdominal Typhus*, from the fact that they were under the impression that it was a typhus with special abdominal lesions. *Patho-Genic Fever* is another term sometimes used, but is bad as it comes from the two words, Pathos, filth, and Genus, to generate, and while filth alone is not capable of producing the disease, it is true that it will form a nidus for the development of the special organisms.

CLINICAL HISTORY—*Prodromic Stage*: The disease generally comes on insidiously, so differing from malarial fever, which is ushered in by a distinct chill. But usually there are prodromic symptoms, as a feeling of general malaise, loss of appetite, languor, complaint of being tired, chilly sensation referred most commonly to the spine. The pulse is small and slightly accelerated, but there is often no elevation of temperature distinguishable by thermometer, and at this period it is impossible to tell exactly with what you have to deal; the length of this period varies from 5 to 6 days to a week, when the patient has to go to bed, suffering from some amount of nausea and some fever.

SYMPTOMS OF FIRST WEEK—Some fever, skin hot and dry, the pulse is as a rule accelerated, tongue has furrowed look except at the edges and tips where the papillae are apt to be abnormally prominent and red. There is often bleeding at the nose. Headache more or less constant, but not acute. Bowels are very apt to be loose but are not invariably, for there may be constipation throughout the entire disease. The stools are of a light greenish yellow color, very liquid and have flocculi floating in them, and have been called from this appearance "Pea-soup stools." Under microscope may find sloughs of alimentary canal in stools. There is some degree of uneasiness in abdomen but not acute pain; there is tenderness on pressure, especially is this true in the right iliac fossa, where you often also get a gurgling sound on pressure, which was thought pathognomonic of typhoid,

but this is not true, as it is often heard in other troubles—e. g. simple diarrhoea, being due to the intestines being distended with gas and fluid. These symptoms shove off into those of the second week, and they may occur in the latter part of the first. More often sometime in the second week, from the 5th to the 12th day, an eruption known as the “Rose Spot” appears. They are papules about one-twelfth inch in diameter, almost circular, pinkish, very slightly elevated, and disappear on pressure—returning slowly when pressure is relieved—which shows that they are due to localized capillary congestion, and differing from the macular eruptions of typhus by the fact that they are not elevated, do not disappear on pressure and are darker, being ecchymosis into the skin and not localized capillary congestion. They appear in crops, and there is no relation between the number of spots and severity of fever. They vary greatly in number from 3 to 4 to 15 at a time, being most often seen on the abdomen, but may be seen over chest and thighs. Are they invariably present? Opinions differ in this regard. Some say that they are absent in ten per ct. of cases; according to others they are always present. Jenner, out of 152 cases, found them present in 148; and Dr. Chew says that even the best examination is liable to mistakes, and that they are liable to be found at any part of abdomen and chest, and are transitory. We may consider that they are at least almost invariably present. *Fever*—There is a continued fever, varying as to degree, but never entirely absent. This, together with abdominal tenderness, diarrhoea, tympanites, and rose spots, are most important symptoms for diagnosis. Any one of these symptoms except fever may be absent. Diarrhoea may appear in first week, but most commonly in second week. There may be constipation throughout the entire disease which is of very great importance to remember, as if forgotten, you may be misled in regard to diagnosis. Fever nearly always shows itself in a characteristic manner. If the rise and fall of temperature be carefully noted, it will be seen that it is highest in the









evening and lowest in the morning, and that of each succeeding evening it is higher than that of the previous, and that of the following morning, although lower than the previous evening, it is higher than the morning before, and this "step ladder" appearance of the temperature is reacted towards the end of second week 105 to 106 degrees. Towards convalescence, although temperature is considerably lower, there is still that tendency to the afternoon rise, and the morning fall. A temperature of 105 the first week points to a case of gravity.

**SYMPTOMS OF SECOND WEEK**—The symptoms of the second week blend with those of the first week. Diarrhoea is apt to increase and stools are now also of pea soup character, and although diarrhoea in the first week was of diagnostic value and of little danger in this period, it may be successive as to endanger life from the great exhaustion which it produces. The pulse is rapid, keeping pace with the temperature, and often having the same variation daily as the temperature, and if at commencement of fever it be 98, by the end of the first week it will have reached 100 to 110 per minute, and there it remains until after second week; it may become as frequent as 120 to 140, and towards the end of the third week it may become double or dicrotic. It is feeble. If it becomes intermittent, it shows heart-failure. *Delirium*—During the first week the mind is clear. In second week there may be delirium, greater at night than at day. With the delirium there is a dry brown tongue and subsultus tendinum. Emaciation is extremely rapid in typhoid fever; it shows itself usually not before the end of second week, and through the third week. The delirium is usually of the low muttering variety, but at times it may be violent and maniacal. *Somnolence* is present to greater or less extent in all cases. The mind and all sense is benumbed, so that a fly may walk over face or even conjunctiva, without attracting the notice of the patient. Evacuation of the bowels and urine often take place unconsciously without any effort to control them. This is not due to paralysis, but to

weakness of the will.

**SYMPTOMS OF THIRD WEEK**—Symptoms are much like those of second, but vary as to whether termination is to be recovery or death. The diarrhoea continues, greenish stools with flocculi. Tympanites is more likely to be present during third week. The presence of gas is due to lack of bile, allowing greater fermentation. The bowels are so stretched at times as to cause distress, interfere with respiration, and the bowel may even be ruptured. Sudden fall of temperature of two degrees, with great prostration, at the end of the second or beginning of the third week indicates intestinal hemorrhage. A person may bleed to death, without any blood escaping externally. If patient survives a profuse hemorrhage, there is great danger of death from peritonitis. *Hemorrhage* is liable to occur in this week or at end of second, due to the advanced ulceration. When slight it comes from the capillaries; when more abundant it comes from erosion of the arteries and veins. It may be so great as to be beyond relief, if occurs in all degrees of profuseness. Recovery has occurred after immense loss of blood. Urine is scanty, but suppression is not apt to occur. Prominent symptoms are increased as diarrhoea, tympanitis, and hemorrhage. The temperature is about same as in second week.

**MORBID ANATOMY**—Morbid changes occur first in the lower third of *ileum*, alterations are seen in solitary glands, Peyer's patches, mesenteric glands, liver and spleen. The first change seen in the solitary glands and Peyer's patches is a hyperaemia and swelling followed by ulceration, which may extend down to the muscular coat, through the muscular coat, or even through peritoneal coat, perforating the bowel. Each succeeding patch of Peyer is more ulcerated than the one above it. There are four stages of the affection of the intestinal glands; first, stage of infiltration; second, stage of necrosis; third, stage of ulceration; fourth, stage of cicatrization—any two or all may be present at one time. The lesion affects first those glands nearest ilio-coecal valve and extends 3 to 4 feet up the intestine. Mesenteric glands









are enlarged and of purplish color; ulceration of them does not usually occur. The first involved are those in communication with Peyer's patches. *Perforation* of the alimentary canal is often prevented by formation of adhesions, by the pouring out of an exudation on the peritoneal surfaces. When recovery is the termination, the ulceration undergoes improvement at the end of the third, or beginning of the fourth week. When Peyer's follicles are destroyed, improvement takes place by cicatrization. The follicles are never replaced. When perforation of bowels takes place peritonitis is set up, and it is indicated by sudden collapse. *Spleen changes* are due to congestion, which at first is active, and late passive. It is enlarged and softened, and friable later in disease, as can be seen by gentle palpation. Spleen reaches its maximum by end of second week, and begins to decline by the end of fourth week, and its normal condition is nearly reached by end of fifth week. The change begins in first week. It may become twice as large as normal, and increased from 7 to 8 ounces to 2 to 3 pounds. Liver is somewhat enlarged and softened, but not to same extent as spleen. *Blood*—The blood is darker than normal, coagulates less rapidly, serum is of dark yellow color, and there is less red corpuscles, and fibrin is decreased, and there is a greater amount of white corpuscles. *Tongue*—The tongue changes in appearance. At end of first week the tips and edges are bright red and papillae abnormally prominent; the center is dark and cracked and covered with dry and dark coating. Afterwards this peels off, leaving tongue glazed, dry and hard. This indicates advanced ulceration. At first the tongue is furred white, but not characteristic until end of first week. In convalescence it clears up gradually and assumes normal, the first change being that it becomes moister. (Note—At times the whole mouth becomes covered with thick encrustations; this occurs mostly where extensive blood changes occur, and is a grave symptom.) Not at any period of the disease is the tongue liable to peel off suddenly and present a shining red beef-colored appear-

ance. *Lung* undergoes process known as splenization, being congested, and having <sup>ec</sup>st<sup>ry</sup>moses in them. *Bronchial tubes*, very commonly larger tubes, undergo catarrhal inflammation; it may however extend to the smaller tubes, and give rise to the capillary bronchitis, or catarrhal pneumonia.

*Kidneys*—Most infrequently present degenerative changes, most marked in cortical portion, slightly enlarged, pale and flabby. Infarctions are sometimes found in those dying of the disease. *Larynx* often has a catarrhal inflammation, and at times becomes ulcerated, and the ulcers may also affect Eustachian tube, and when this is the case permanent deafness follows typhoid; owing to such inflammation the salivary glands are enlarged and hyperaemic, and later they become soft, although hard and tense at first, due to parenchymatous change.

*Muscles*—The Recti abdominis and adductors of thigh, sometimes the serratus magnus, pectorals, and triceps of arm, undergo a granular degeneration, thus impairing the power of respiration; the weakness may explain the constant tendency of the patient to slip down in bed. The muscles of tongue may be affected, causing the slowness and jerkyness of protruding and drawing in of tongue, together with the trembling.

*Heart Muscles*—Heart muscles often become weakened, and it is often the cause of a fatal termination. This is shown by a weakening of the first sound. The fibres have undergone that same degeneration, and the heart in the third week is apt to be dilated and flabby, pale yellow in color, and then is called "faded leaf," removed from chest of one who died in this stage its walls collapsed. The change in muscle is not only a cloudy but also a waxy change, the former being the more often and general, but not infrequently the two exist together. Cause of the fatty degeneration is thought to be the constant hyperpyrexia.

*Skin*—Rose spots are more frequently seen on abdomen than on the thorax. They are sometimes found on inner side of thighs. They may not be present at all, that is they may be overlooked. Their presence, however, proves the diagnosis.









~~Pathology~~—Neither vegetable nor animal decomposition in themselves are capable of producing the disease; they favor its spread, however. Sewer gas is not a cause. The cause is the "Bacillus Typhosus," first discovered by Eberth in 1880. The Bacillus has rounded ends, three times as long as it is broad, and its length is about one-third the diameter of the red corpuscles. They are invariably in the spleen, Peyers patches, and mesenteric glands in typhoid fever. They may be cultivated in a jar of agar or gelatine. They can be gotten from spleen by puncturing it with a needle, and then making a culture of them. They have an elective affinity for Peyers patches and spleen. The third part of Koch's test, as to the causal relation of bacteria to disease, viz: the inoculation experiments not yet proved, it is asserted true by some, and not by others. Simmons thinks he has proven it. The bacilli are present in the stools, and this is the probable method of their propagation. Drinking water is the chief medium by which the bacilli is introduced into the system. Filtering water does not render it free from micro-organisms. A temperature of 140 F. is sufficient to kill them. The cold of ice water does not destroy them at all, and it may be the medium of their conveyance. Boiling water is the best way to render it free from bacilli. It has been thought possible that the inspired air was the medium of transmission, but most probably this is untrue. Attendants, nurses, and doctors do not get the disease from the patient. The period of incubation is from 14 to 20 days after reception into the body. Milk has been thought to be a medium of infection—i. e., milk coming from an infected cow; this is not true. In case of infection by milk, it has been due to the infected water used to clean the vessels and adulterate the milk. Oysters, which come from infected waters, are thought of late to be the medium of transmission; those which come from water well out from shore will not. So drinking water is the most usual method of transmission, and therefore all drinking water should be boiled in the summer and should be put into closed vessels,

and laid upon ice, and ice not put into water. Manufactured ice from artesian wells, and from distilled water, is not liable to contain the bacilli. The development of many of the symptoms of typhoid fever are due to imperfect functioning of the liver. This indicates that Ptomaines are carried there and set up the disturbance. It is an office of the liver to eradicate noxious substances absorbed into blood from the alimentary canal. The bile promotion is interfered with, and there is thus allowed increased putrefaction and formation of gases in large amount, producing tympanitis. The increase in the size of liver is due to the disturbed state. Delirium and coma are due to the blood not being freed of the noxious products by the liver, acting as poison on the brain centres. The bacteria probably have an elective action on the patches of Peyer and cause greatest disturbances there.

**PREDISPOSING CAUSES**—Typhoid fever is most common in early life, although it has occurred in patient of 70 years. It is most apt to occur between 14 to 36 years of age. The average age is 21 years. It is especially rare in infants. Nursing children before 1 to 2 years seem to be immuned from the disease, because they do not take water. Both sexes are equally liable to the disease.

**DIAGNOSIS**—In early stage may be impossible, because not sufficient symptoms have manifested themselves; they develop slowly, and one by one the points of diagnosis are continued fever with "step-ladder" arrangement, diarrhoea, tympanitis, and rose spots, the symptoms coming on gradually. Administration of quinine will often help to make diagnosis, as if fever be malarial it will be markedly affected, but not if typhoid. *Bronchitis* is sometimes taken for typhoid fever, but temperature rarely goes above 102, has not the step-ladder arrangement, and the symptoms are not of such a gradual onset. Bronchitis often complicates typhoid fever. Pneumonia is sometimes mistaken for typhoid. *Acute Phthisis*: But in this temperature rises high from the beginning, and may be 106 to 107 in a few days, which is









not likely with typhoid. No rose spots, no enlarged spleen, no pain on pressure over inguinal region. In case of doubt whether tuberculosis or typhoid, the family history and the history whether patient was exposed to typhoid, or whether there is any prevailing at the time, will aid greatly. •*Tubercular Meningitis*: Having delirium, fever and diarrhoea it may be mistaken for typhoid. It rarely occurs after 21 years of age. The temperature reaches its highest point early. The Ophthalmoscope shows tubercular deposits on the choroid. There is no enlargement of spleen, no rose spots.

PROGNOSIS—In epidemics the mortality was formerly 16 to 32 pr. ct., the average was 20 pr. ct. Cause of death is oftenest gradual weakening of heart (cardiac asthenia,) due to granular and fatty degeneration. Complications may end the disease, such as passive congestion of the lungs causing dyspnoea, hemorrhage of bowels in great amount, and peritonitis rapidly increasing, both of which may be due to rapidly increasing tympanitis. These are the commonest causes of death.

TREATMENT—There is no known method of aborting the disease, or shortening its length. Quinine, calomel, and wet packs, were once thought to be able to cut it short, but if aborted it was remittent and not typhoid fever. The present method of treatment consists in the systematic use of Brand's method—i. e., systematic use of cold water to lower temperature when it reaches a certain height. It was first practiced by Brand in 1881; it has been universally adopted since. Other methods were the *expectant plans* of treatment in which nothing was done except seeing to the diet and general hygienic condition; and *symptomatic plan* in which nothing was done but treat the symptoms of diarrhoea, sleeplessness, etc. In both of these nothing was directed toward the underlying cause. The adoption of the Brand's method has lowered the mortality average from 17 to 25 per ct. at first, to 9 per ct., then to 6 per ct., and then to 4 per ct., and according to the latest report of Brand, out of 2200 cases only one-seventh per ct. In those cases where bathing was adopted be-



fore the fifth day, out of 2150 cases there was not a single death. In the Md. University Hospital in the last five years, by use of cold bath, have lost only one case, and that was a typhoid engrafted on a pyaemia. The method is this: whenever the temperature of the patient reaches  $102\frac{1}{2}$ , he is placed in a bath of 65 to 75 F., a wet compress is placed upon the head. His neck should be submerged up to the chin. The patient should be briskly rubbed while in the bath. He may remain in it for 15 minutes, then taken out and thoroughly dried, and placed in bed. (Chew says that 65 degrees is better, but should first be 75 and lowered to 65, as not so liable to shock patient as in sudden submergence of 65 degrees. Water should be poured on shoulders and neck, as this agitates the water, and brings fresh layers of water in contact with body.) The temperature often continues to drop after he is put in bed. This plan is repeated as often as needed, as indicated by thermometer. If temperature rises as high as  $102\frac{1}{2}$  even in half hour, put him in bath. Do not be deterred by the begging of patient and the desistance of bystanders, as they are not judges of the condition. Even if not begun until the second week, it does a great deal of good, and it will often materially better the patient's chances. If the patient is chilled or shocked, give wine or spirits. The bathing changes the whole phase of the disease. There is often no delirium, no furrowing of the tongue; tympanitis is not liable to occur; diarrhoea is much benefitted. What might have been a severe case is converted into a mild one. The cold baths not only reduce the temperature, but tone up the nervous system, by acting on the peripheral nerves. The patient is not apt to have hurried respiration attendant upon a bronchial catarrh; the heart action is strengthened, the digestive function is stimulated, and the disintegrating and wasting changes are checked. The bath tub should be kept in the room; the water need not be replenished for several days, unless soiled by evacuations. In advanced stages of the disease where there is cardiac disintegration the bath may be very hazard-







ous; up to the beginning of the middle of the second or beginning of third week it may be employed with benefit. You can reduce temperature by coal-tar series of antipyretics, but at risk of depressing the heart. Bath-tub should be placed in immediate proximity of bed; place sheet over patient and then submerge. Objections are made by friends on account of the complaint of the patient, and others on the ground of trouble, and again on score of expense, but do not let any one cause you to abandon the treatment. If even in doubt of diagnosis, give the patient the benefit of the doubt, and give the cold baths. When not allowed to use bath, do all you can, but declare that you will not be responsible for the outcome of the patient. If you are called up after time has passed where best results can't be gotten by the bath, there are symptoms which must be treated, and not rely on the cold bath—e. g., 1, *Diarrhoea*, which is probably best treated by chalk, and one of the vegetable astringents: three parts official chalk mixture to one part tinct. Kino, and to every half-ounce give grs. xv to xx bismuth; may use acetate of lead and opium. When skin is hot in spite of the cold bath, and digestion is not good, give dilute HCl, as it aids digestion, and it being somewhat astringent tends to control diarrhoea, and it also tends to render the alkalinity which often exists in blood more neutral; give 15 to 20 gtts. throughout the whole disease; it does no harm, but may do good; not advisable to give lemonade, which is often asked for. 2, *Tympanites*—It will not always be necessary to treat when cold bath is used early. Turpentine strapped over abdomen or 15 m. turpentine in emulsion with ox-gall 3 to 4 grs. diminish flatulence 3, *Intestinal Hemorrhage*—Hard to say in what proportion it occurs, but it is not infrequent and it has often been the cause of death; less apt to occur if bath be used properly and early, as it checks the ulceration in bowels. No matter how large the hemorrhage, always give the benefit of treatment to the patient, as you cannot know which vessel, large or small, is eroded. Second, a vessel so large is often eroded that it will

cause death just so sure as if femoral were cut, yet cannot tell during life, so keep up treatment to the very last, as often cases which look most hopeless recover. So apply ice-bladder over ilio-coecal region, as it is here that the ulceration is probably farthest advanced; should be applied and removed alternately every 15 minutes. Turpentine is probably the best of internal remedies; it not only does good by being a direct astringent, but it relieves tympanites which, by distention, tends to augment bleeding; 15 to 20<sup>M</sup> in mucilage of acacia every two hours. Again, ergot hypodermically often does good and should always be used: Fl. ext. mxx, or gr. 1 Ergotine in solution hypodermically is a very good manner to administer. 4, *Intestinal Perforation*—Perforation is greatly diminished in frequency by both Ergot and Turpentine. Generally when it occurs patient suddenly cries from pain, draws up the limbs, and pulse becomes very frequent and weak. In this case put patient under influence of opium at once: give morphia hypodermically, as it controls peristalsis and hence escape of contents of intestine through the perforation is prevented or lessened; acts as an antiphlogistic. 5, *Complicating Pneumonia*—Pneumonia may be of two kinds: first, lobar pneumonia, which comes on in latter part of first, but more often in second week, in which chill comes on and the temperature afterwards rises; second, hypostatic pneumonia. There is gravitation of the contents to the lower back part of lungs, and on both sides, so symptoms are a great increase of frequency of breathing, and on lying patient on side get dullness and bronchial breathing. If lobar pneumonia no change of treatment necessary, but if hypostatic change position from side to side as it relieves the mechanical disturbances. It is not well to suddenly raise patient to sitting position in late stages of typhoid, and especially if there is a pneumonia present, for fear of a sudden collapse from cardiac thrombi. Then the administration of alcohol and strichnine to keep the heart up, and aid the absorption of the exudation by applying counter-irritants to the chest. 6, *Cardiac Asthenia*—There is a condi-









tion, viz., of extreme cardiac depression where alcohol is the one drug, and unless it be given a great many cases are lost. It should be given finally and regularly. If you find the first sound weak and imperfectly formed, it is due to feebleness of heart muscles. Now give alcohol, and if it acts favorably the heart gets stronger and diminishes in frequency. In some of these cases you will not smell the odor on the breath, which shows that it is retained. Often strychnine saves the life when there is cardiac asthenia, especially acute. Use  $\frac{1}{30}$ th to  $\frac{1}{60}$ th of strychnine every 2 to 3 or 4 hours, and watch for poisoning; often may be given for 2 to 8 days, without any symptoms. Cases are encountered when we are unable to try the cold bath—e. g., when in some nervous persons the attempt to give bath causes too much excitement, and the good is overbalanced by the bad. Second, when we see the baths will do no good but still the patient's temperature requires abating, for this use the local sponging, which although inferior to the bath, is far superior to the coal-tar series, and better than letting the fever run high. Do not expose the whole body at one time, but sponge first on chest, then arm, etc. Local application of guaiacol reduces temperature; apply 20 to 30 drops with a camel's hair brush. It smells like creosote. Some say that it reduces strength of heart, but this is not universally thought. Guaiacol acts slower than bath in reducing temperature, but in a great many cases it remains down longer than by bath. But on the whole the effect produced by guaiacol is probably inefficient compared to bath, and hence it is only a substitute for bath when you cannot use the bath; but it is better to use guaiacol than to have the temperature high. 7, *Bed-Sores*—Under use of bathing system they are less likely to occur, because bed-sores depend first upon the length of time that the body is exposed, which is materially abated by bath, and again the effect of baths are nutritive processes. If bed-sores occur observe whether the skin is broken, and if it is not broken apply alcohol 2 to 3 times a day, but most important is relieving the pressure on

affected part, and for this the air cushion is good, but if skin is broken wash part with solution of carbolic acid, 5 grs., to the oz., and then brush over with balsam peru, or apply lead plaster. 8, *Constipation*—Not infrequently is constipation, because not only may we have it from the first but may have it alternating with diarrhoea, but do not use active purgatives as they may start a diarrhoea which cannot be checked; it usually depends upon an impaction in lower bowel, which is best removed by an enema, but should you not remove give a tablespoonful of castor oil, and if not enough repeat in 3 to 4 hours. 9, *Femoral Phlebitis* often occurs. It is an inflammation of femoral vein with very great pain, the limb swells very much, and the skin shines and resembles Phlegmasia alba Dolens. It is more frequently seen in left vein than right, and hard to find an anatomical cause. When it occurs it is serious, not because it threatens life in itself but because it occurs when the patient is weak, and so it may kill and often does. Treatment: control pain by the employment of morphia hypodermically, and envelop the limb with cotton-batting to promote the warmth of limb; this has cured all of the cases for Dr. Ch  w. 10, *Relapses* in typhoid fever are very common, even after convalescence has begun. Causes: first one is the too early return to solid diet, and therefore best to allow three weeks to relapse after all fever has disappeared before any solid food at all is used. This depends probably upon the poor digestion, allowing undigested food to go down and produce irritation of Peyer's patches. Another cause is getting up too early, sitting up, etc. Another supposition is from another infection. You may even find in some cases another outbreak of rose spots. Treat as the first attack, but always guard against the causes.

**Typhus Fever.**—(Jail Fever, Ship Fever, Spotted Fever, Camp Fever—*often to be distinguished from typhoid*) Of secondary importance, because seen less frequently than typhoid, which always lingers to more or less extent, but typhus is not invariably present, at least in endemic form, but it may be in ep-





Spotted.  
Endemic  
Every place  
Typhoid fever  
1st infections  
All dominant symptoms  
Papular Eruption  
Between 2-50  
It tends to recur  
twice but do not  
give immunity  
as against each other  
B. roseo-ovoides  
1st stage longer

Spotted  
Epidemic  
Six port towns  
I have not found any  
2nd infections  
Not abdominal symptoms  
1st stage eruption  
At any age.  
Same  
B. roseo-ovoides  
1st stage more brief.



idemic. The cause is not known, but the favorable conditions for its development are known. Typhus was, until considered by Jenner, Louis and Jackson, thought synonymous with typhoid, but the two diseases have no resemblance and should always be differentiated with ease. The disease usually originates at sea-port town, and can by rigid sanitary rules be controlled; typhoid occurs anywhere. Typhus is very infectious; Typhoid is not. Typhus fever is favored by filth and crowded condition. Typhus means stupor. It may be defined as a febrile disease prevailing epidemic, having peculiar petechial eruptions and symptoms of adynamia, viz., failing of muscular power; also called Ship-fever, because it occurs on filthy ships; also called Jail-fever, because it was crowded and filthy; also called Barrack-fever and Camp-fever.

**DISTINCTION BETWEEN TYPHUS AND TYPHOID**—First, in typhus we have not the abdominal symptoms; in typhus also have a petechial eruption, but it does not disappear on pressure, and comes out at once and remains out until disease ends, all over body; they differ in origin. Neither typhus nor typhoid liable to occur twice in same person, but neither of the diseases give immunity against each other, and this shows distinctly that they are different. Essential cause of typhus is not known, but on ground of inference it is in the highest degree probable that it depends on a specific microbe, and it is conceivable that it is an organism too small to be seen by our microscopes. Other points of variation between typhoid and typhus are that the former is seldom seen in persons before 2 or after 50 years of age, but typhus occurs at any age, but most often between 15 and 50 years.

**PATHOLOGY**—The anatomical lesions differ from those of typhoid, because although we have slight elevation of Peyer's patches, presenting a shaven-beard appearance, due to local capillary congestion, there is no ulceration and no necrosis as in typhoid. Mesenteric glands are not affected. (Soft clots are at times seen in heart because of the heart-



failure. The muscles of heart as well as the muscles at large undergo the fatty, cloudy changes as in typhoid.) Chief changes seen are in the blood; it is darker than natural, more fluid because containing less fibrin, and coagulates less readily, and becomes putrescent more readily and quickly on exposure; this probably explains the stupor; the liver and the spleen are congested but not enlarged as in typhoid, the lungs are congested and particularly prone to hypostatic pneumonia; the kidneys are congested. (Note—Red blood cells are broken up and there is pigment deposited in skin. Brain is congested very much in some epidemics while in others there is serous effusions in membranes chiefly, and to some extent in the ventricles without any congestion. Brain is anaemic in typhoid.)

CAUSES—Probably due to specific poison only on ground of inference, but it is capable of being transmitted through the air from one person laboring under it to a well person; it is as contagious and infectious as small-pox, and it depends upon some emanation either organic, gaseous, or some organism coming from those laboring under it. But although it is very contagious, yet it does not necessarily occur in one who is to it exposed. It is uncommon for washwomen to get the disease from washing clothes from those affected, so actual contact is not necessary, but more frequently taken in the inspired air. No doubt that it is more contagious in those places where there are many cases crowded together, and especially would this be so if the contagion were gaseous; and again, the poison can be diluted by exposure to air, and so putting patient in tents in the yard lessens the contagion, and by accident it was discovered that the best therapeutic measure was to put in tents. In fact this has a very important bearing upon the treatment. (Typhoid due to microbe, whereas none is found for typhus.)

SYMPTOMS—Are characteristic and strikingly so as contrasting with many in typhoid. First *Stage*—More brief than typhoid, and patient takes to bed in a few days, often







without any prodromes with profound chill and adynamia, headache; the skin of dusky hue, beginning first in the face, and the nervous system markedly affected. (The dusky hue due to capillary congestion.) *Subsultus Tendinum*, pain in back and limbs, twitching of face, temperature reaches 104 to 105, quickly the tongue becomes covered with thick black coating and cracked, and pulse rapid. *Diarrhoea*, and *tympanitis* not very common, and if present not so marked as in typhoid. Hemorrhage from bowel is dark and limited, and apparently due to oozing from capillary; it does not occur in most cases. In about 95 per cent. have petechial eruption, which has a dark dusky mottled appearance, and does not disappear on pressure, as it is due to leakage from ruptured small vessels, so differing markedly from rose spots. Again, eruptions come on at once, whereas in typhoid form in 5 to 12 days, and in typhus occur at once and remain. The symptoms do not temporarily ameliorate when the eruption occurs, as in measles. Symptoms depend for gravity upon intensity of eruption. In second week the eruption is present, and does not disappear. The duration is then shorter, as the result is well on to convalescence, or fatal by the end of second week, thus again differing from the typhoid. The heart is weaker, and this comes on earlier than in typhoid. Again, as in the beginning, it ceases suddenly by crisis, and patient may go to sleep with delirium, temperature 105, and adynamia, and when awakes in 10 to 12 hours he may be better, and the fever 101 to 102, and delirium gone, but this may still terminate in death by heart-failure instead of convalescence. So now stimulate heart by whiskey, hypodermic, etc. Abscesses may occur in subcutaneous and inter-muscular areolar tissue; may occur at first or later. If it were not for the short duration it would be more fatal, but it is not more fatal than typhoid.

**TREATMENT**—It is probably true that the cold bath from the beginning would give just as good results as in typhoid. The patient should have plenty of air, (and not confined to hospital ward,) which not only betters patient's chances, but

dilutes the poison, and hence the attendants are less liable to the disease, even in mid-winter. Limitation to strictly liquid diet is probably not so important as in typhoid, but keep patient on milk diet on account of the lessened ability of digestion, due to febrile process. Use of alcohol should be a prominent part in the treatment on account of the adynamia; the use should be guided by the frequency of pulse, and if the first sound of heart is weak, but probably if cold bath were used at once it would lessen the adynamia. *Hypostatic Pneumonia* is prone to occur; use counter-irritant and change of position. HCl. is given through the disease. Digitalis might be of value in severe adynamia. For constipation may use enema, and if not sufficient give castor oil. Abscesses occur often, and seen commonly in prostrate gland, also at times the whole scrotum may slough away; cleanse them, and give adequate support to constitution and relieve pressure. Possibly by the present sanitary measures we may be able to entirely stamp out the disease. Indication for treatment: first, dilute the poison by putting patient out doors; second, relief of fever by bath; third, cardiac asthenia; fourth, constipation; fifth, abscesses; sixth, hypostatic pneumonia; seventh, diet.

*See page 207 Relapsing Fever.*

## EXANTHEMATOUS FEVERS.

Variola; Rubeola; Scarlitina; Scarlet Fever; Varicella.

**Variola**—Small-pox may be defined as a febrile, infectious, contagious disease, preceded by an incubative period, characterized by regular order of symptoms, and a peculiar eruption, which is first macula, then papular, vesicular, and pustular, the pustules being umbilicated.

**HISTORY**—We know not how it first originated, and although we do not know cause it is probably from ground of analogy due to a microbe. It was first seen in East India, Asia, etc., and was first described in 10th century, by the Arabian physicians. At time of crusade between West and East, we then had it communicated to the West, and from

*Incubation 9-15 days*









that time on has been more or less prevalent both in West and East, and although under control it has never been stamped out. Multitudes died of it in London in the past century, and nearly all were pockmarked.

CAUSE—It is propagated by atmosphere and depends on its own specific poison, may also be propagated by direct contact. Most diligent and effective search has failed to find any specific microbe. A few days Koch and Virchow thought that it was due to specific organism, which they found, but later proved to be only pus organism.—

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**Relapsing Fever**—Is ordinarily classed as “continued fever,” but the fever is not continuous, but broken into after 6 to 7 days. It is also known as “Famine Fever,” “Seven-day Fever,” Recurrent Typhus,” etc. There has been none in this country since 1869. It is a form of fever, epidemic, characterized by sudden invasion with febrile stage of 6 to 7 days, and suddenly disappearing, accompanied by nausea and vomiting; after 6 to 7 days may again appear; there are generally two relapses, but may be 4 to 5. It is always an epidemic, and depends upon a peculiar spiral organism, Obermeier’s Spirillum, present in the blood. The bacteria are three to four times as long as the diameter of a red corpuscle. During the paroxysm it is easily seen by microscope; during the interval it apparently disappears, probably few being left which increase and give rise to the next paroxysm.

SYMPTOMS—Appear suddenly by chill and sudden rise of temperature, absence of eruption, pulse 125 to 150. There is often indication of bile pigment floating in blood and jaundice appears. Complications do not often occur. When it attacks pregnant women it tends to produce miscarriage, the foetus being born dead.

DIAGNOSIS—From *Typhus*. Typhus has petechial eruption, and fever does not fall on 6 to 7 day. At first the diagnosis will not be made, but as soon as it runs through one of its typical courses it will be undoubted. Examination of blood will determine.

PROGNOSIS—Good in general, however, cardiac failure occurs sometimes when patient is convalescing. No constant morbid changes are seen in the disease.

TREATMENT—Often no medicine is called for; nutritious food is indicated. Second, the paroxysm cannot be prevented; quinine has no power to prevent the second attack. Heart must be stimulated by alcohol and tincture of digitalis, gtts. xv every third hour. It is probably communicated by lingering in clothing. 

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VARIETIES—1, *Discrete* when the pustules are scattered. 2, *Confluent* when the pustules run together, forming a more or less continuous mass of pustules or scabs. 3, *Hemorrhagic* in which the exudate is blood instead of pus; this is the most severe form.

MORBID ANATOMY—1, The *internal organs* are congested; the spleen is enlarged, probably from poisonous products and from inability of skin to do its proper work. 2, The *Skin* shows an eruption at first macula, and then successively papular, vesicular and pustular. The whole thickness of skin is affected; the spots are one-eighth to one-fourth of an inch in size, and the skin at the point is infiltrated with serum and cells. In the vesicular stage the eruption becomes umbilicated from the exudate around the circumference of the spots, the centre being held down by flattened epithelial cells and sweat glands. Each pustule is divided into several compartments by the frame-work of epithelial cells. 3, The *Mucous Membrane* undergoes changes similar to those in the skin.

SYMPTOMS—1, *Nervous*: A chill, headache, very severe backache, delirium, restlessness, and somnolence. 2, *Temperature* is elevated at first,  $102^{\circ}$  to  $104^{\circ}$ , but usually falls on the fourth day, when the eruption appears. On the eighth or ninth day, when suppuration occurs in the pustules, there is another rise of temperature, often to  $105^{\circ}$  or even  $109^{\circ}$ , which is due to the absorption of septic matter. It declines gradually in favorable cases and usually disappears by the 14th or 15th day. 3, The *Pulse* is rapid. 4, The *Digestive*







symptoms are nausea and vomiting and sore throat—the former due to action of ptomaines and swallowing of morbid matters; the sore throat due to the eruption in the throat.

5, *Cutaneous*. Sweating usually occurs in the early stages. The eruption begins on the *face* usually. It appears on the fourth day, the pustules dry and form crusts which come off from the fourteenth to the eighteenth day and usually leave pits. Usually a macular eruption appears before the real rash of small-pox, but it lasts only a short time.

DIAGNOSIS—From *Measles*, by the violent backache, the absence of marked coryza, and especially by the rash which soon becomes vesicular and then pustular. From *Typhus Fever*, by the character of the eruption. (In many cases it is impossible to make a diagnosis in the early stages before the vesicles and pustules appear.)

COMPLICATIONS—1, *Pulmonary and Laryngeal*. Bronchopneumonia from the inhalation of morbid matter and ulceration, and possibly stenosis of the larynx from the ulceration. 2, *Special Sense*. Otitis media may occur from extension from the throat. Occasionally keratitis and ulceration of the eyes occurs. 3, *Urinary*. Albuminuria is common, and occasionally well marked nephritis occurs.

PROGNOSIS is always serious, and is influenced by the following circumstances: 1, *Amount of Eruption* and *type* of the disease; *varioid* is least dangerous; *discrete* small-pox is less dangerous than *confluent*, and *hemorrhagic* is most dangerous. 2, *Intemperate habits* increase the danger. 3, *Previous good health* renders prognosis more favorable. 4, *Pregnancy* adds greatly to the danger. The time of greatest danger is the eighth day.

CAUSES OF DEATH are toxæmia and exhaustion.

TREATMENT—A.—*Prophylactic*—1, *Vaccination*. 2, *Quarantine*. B.—*Medicinal*. 1, *Reduce temperature* by phenacetine, etc. 2, *Allay restlessness* by the bromides, phenacetine, codeia and other analgesics. 3, *Promote Eruption* when slow in appearing by warm baths and Dover's powder. 4, *Sustain strength* by nutritious food and stimulants, if exhaustion is imminent.

5, *Prevent pitting* by applying a paste of carbolic acid, glycerine and prepared chalk. (There is no satisfactory method of preventing pitting.) During dessiccation *warm baths* with subsequent oiling of the surface should be employed to promote the removal of the crusts.

**Varioloid** is a mild form of small-pox which usually occurs in those who are partially protected by vaccination. In itself it is not dangerous, but it may cause severe small-pox in others who are unprotected. The incubation period is shorter than in variola. Pains, temperature, &c., are just as severe, but the eruption is not so extensive and the secondary fever is less severe. Treatment is the same as a mild case of small-pox.

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## VACCINATION.

VARIETIES OF VIRUS—*Non-humanized* is obtained directly from the cow-pox pustules on the udder, and *Humanized* is obtained from a vaccination pustule or scab on the human being. The *bovine* virus causes a more severe sore, as a rule, than humanized, but it is more satisfactory in its results, and there is no danger of communicating other diseases when it is employed.

PROTECTIVE POWER—Persons properly vaccinated are almost entirely protected from the danger of small-pox, but the immunity does not last indefinitely, so that vaccination should be repeated every three or four years. *Erysipelas* and certain acute and chronic *skin diseases* interfere with the success of vaccination, and some people are unsusceptible to it. Diseases which may be communicated by vaccination with humanized virus are *syphilis* and possibly *tuberculosis*, but such accidents are rare.

HOW TO VACCINATE—The skin should be slightly scratched or pricked, so as to get through the outer layers of the skin, but bleeding should be avoided because the blood may wash out the virus. Having scratched the skin, the virus is to be rubbed over the surface. If a "vaccine point" is







used, the end of the point on which the virus is must be moistened with water first and then rubbed on the scratched or punctured surface.

## YELLOW FEVER.

There is a certain amount of resemblance between yellow and malarial fever. Yellow fever is an acute febrile affection, prevailing chiefly in Tropical America, and on the coast of Africa, attended with jaundice, hemorrhages, and ~~ur~~emia from suppression of urine. It is both endemic and epidemic. Some areas are never free from it (endemic,) others get it once in a while (epidemic.) The region where it never becomes extinct, is latitude between 20 S. and 40 N., and is termed its focal zone. Where it occurs epidemically is from 35 to 20 S. and 40 to 45 N. latitude; termed accidental zone. Gastric hemorrhages, causing the black vomit and some amount of discoloration of skin always occurs. The period of incubation is <sup>LASTS</sup> ~~lost~~ from 1 to 3 days, during this stage the patient shows no sign of the disease. When it makes its onset, it can be divided into three stages; first, stage of invasion; second, of apyrexia; third, of exacerbation. *First Stage of Invasion* lasts from a few hours to 2 to 3 days, may be preceded by prodromic symptoms, headache, nausea, etc. Usually, however, there are no prodromes, patient has a severe chill, and fever rises, pain in head, back and limbs, with eyes bright and injected. Vomiting occurs, bowels constipated, patient going through malaise and discomfort. Sometimes these symptoms are so mild that patient will not know he is sick when they constitute the "*walking cases.*" *Second Stage of Apyrexia*, fever abates, however does not fall to normal, pain ceases, and stomach is relieved, and it seems as if patient is convalescing; this stage lasts from 2 to 48 hours, when the *third or stage of exacerbation* shows itself, the temperature again rising to 103 to 105. Delirium sometimes occurs, and pain returns, jaundice marked, stomach symptoms, vomit of an acid reaction, white vomit, then it gradually gets

black, which is due to altered blood corpuscles. Hemorrhages occurring from the mucous membrane, except of bladder. Albumin is present in urine which is diminished in amount, until it is suppressed. The skin gets a mahogany color. After the black vomit occurs the patient may yet recover, but when urine becomes suppressed the case is always fatal.

DIAGNOSIS—The remission of *intermittent fever* is quotidian, while that of yellow fever occurs but once. Quinine has no effect on yellow fever but has on intermittent. There is no obvious enlargement of spleen in yellow fever, as in intermittent fever. The liver of intermittent fever is enlarged, of bronze color, while in yellow it is of natural size or even smaller, and of yellow color, often called the "chamois liver." From *Remittent Fever*, is probably not a portable disease, while yellow fever is introduced in this manner. Yellow fever is a disease of the coast. The temperature in remittent is higher than in yellow fever. Albumin not present in intermittent fever. Vomited matter of remittent fever is altered bile, that of yellow is altered blood. In yellow fever it is ejected with force, while in remittent fever it is with retching, and regurgitation. They both prevail at same time of year, and are ushered in with chill and fever.

CAUSATION—The germ of yellow fever has not been isolated, notwithstanding, from inference, we believe the disease depends on specific microbe. The disease is portable, being carried in clothing. Frosts put an end to the malady; an average temperature of from 72 to 75 degrees seems to be necessary for its development. Filth is a good nidus for the germ. The streets of Jacksonville, Fla., are paved with wood which becomes moist and decays, and so the nidus is formed for its development. The rate of mortality varies in different epidemics, from 10 to 75 per cent.

MORBID ANATOMY—The stomach is red, its follicles injected and projecting above the mucous membrane giving mamillated appearance. The striking change seen in the liver, which is usually of normal size, is a dark yellowish









color. The secreting epithelium undergoes fatty degeneration. The acute yellow atrophy of liver is different from that of yellow fever. The heart muscles are soft and friable, due to the poison of the disease and not to the high temperature. The blood corpuscles are broken down. The kidneys are congested, with much infiltration and some fatty degeneration. The skin varies from dark yellow to a mahogany color.

TREATMENT—The cases must be treated symptomatically, there being no specific for the disease. It is hard to promote action of skin. Calomel in small doses, one-eighth to one-quarter grain, may control vomiting. To control the black vomit use counter-irritant, as mustard plaster, on abdomen. Appolinaris water, or champagne and crushed ice, may allay irritation of stomach. Dr. Ste<sup>3</sup>nberg recommends the following:  $\mathcal{R}$  Sodium bicarb. gr. 150, Hydrarg. bichlor. gr. 1-3, Aqua Oij,  $\frac{1}{2}$  to 1 oz. every hour. It controls vomiting, and the alkalinity seems to be detrimental to the poison. The wet hot-pack may be useful, not to reduce fever but as a diaphoretic, and so inviting blood to the surface and relieve the congestion of internal organs, especially the kidneys, for suppression of the urine is fatal. *Prophylaxis; Quarantine*, and destroy articles of clothing which have come in contact with the disease, and demand cleanliness.

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## INFLUENZA.-- (LA GRIPPE.)

DEFINITION.—An infectious disease characterized by great prostration and often catarrh of the mucous membranes, particularly the respiratory and gastro-intestinal. There is liability to serious complications, particularly pneumonia.

ETIOLOGY—Cause unknown. Some authorities hold that it is due to a miasmatic material in the atmosphere; others hold it is due to a specific virus. Like other rapidly spreading diseases it is conveyed along line of travel.

MORBID ANATOMY.—Uncomplicated cases recover. We see fatal results in the aged and delicate. The mucosa of

the larynx and pharynx is injected and swollen, and a catarrhal condition of the stomach and intestines may be present. The complications are varied. Severe bronchitis, lobar and lobular pneumonia, and nephritis may exist.

**SYMPTOMS.**—In mild cases catarrh with slight fever, dryness and swelling of the nasal mucosa, followed by increase in the secretion. In severer cases the coryza is mild or absent; may be nausea and vomiting. Severe *nervous* manifestation at the outset is headache, pain in back and the legs, and a general soreness as if bruised or beaten (not quite so pronounced as in small-pox). Delirium may be marked. Cardiac weakness and prostration is out of proportion to the intensity of the fever, and sometimes is very alarming. The pulse is feeble, small and intermittent. Death may result from heart-failure.

**COMPLICATIONS.**—Delirium, meningitis, bronchitis, pneumonia, abscess of lung, pleurisy and empyema may develop. Nausea and vomiting; diarrhoea is not uncommon.

**DIAGNOSIS.**—Coryza is not always present, and there may be general fever with prostration. Sometimes bronchitis may be an important feature. Severe prostration, fever, delirium, with initial bronchitis and occasionally epistaxis, may be mistaken for *typhoid fever*.

**TREATMENT**—Confine to bed until fever disappears. Well fed and nursed. Bowels should be opened by a dose of calomel or a saline draught. At night 10 grs. of *Dover's Powder* may be given. Warm bath sometimes relieves pain in the onset; after it give hot lemonade and warm the bed before patient is put back into it. If fever is high give small doses of antipyrin and apply ice cap to head. Complications should receive appropriate treatment.



Malaria	from	
Zyphoid	"	
Zyphus	"	
Relapsing	"	
Yellow	from	
asiatic cholera		
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